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Seafood Business Report

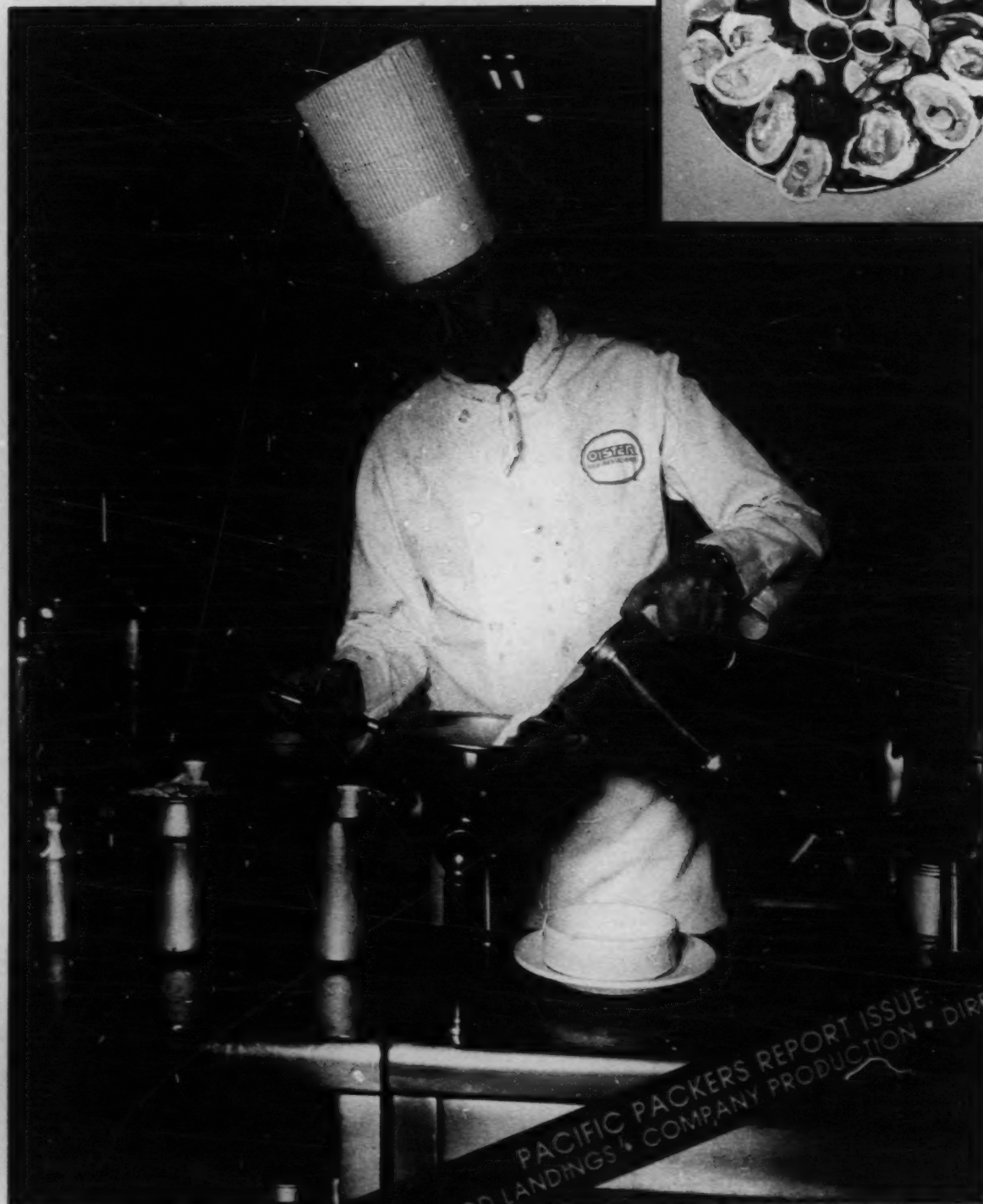
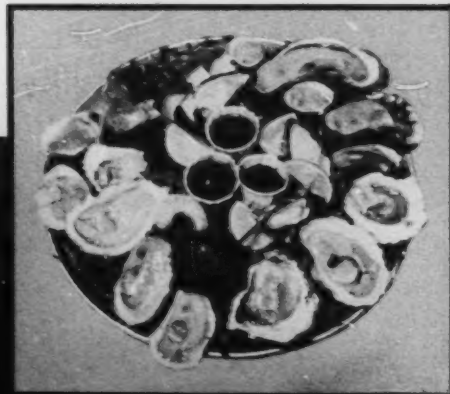
SPRING 1982

VOLUME 80, NUMBER 1

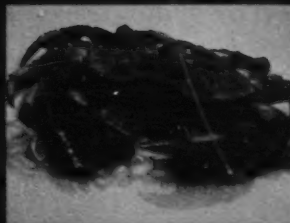
RETAIL SOLUTION: Chilled Fish

FOODSERVICE: New York's Oyster Bar
Seattle Chefs Celebrate Seafood

PROCESSING: Model Whitefish Plant



PACIFIC PACKERS REPORT ISSUE
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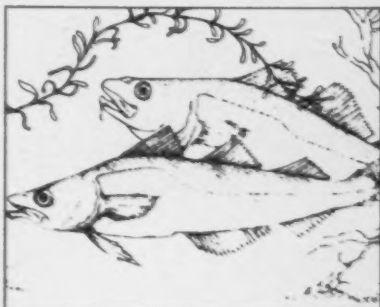
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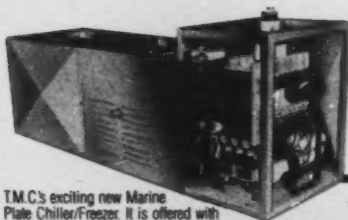
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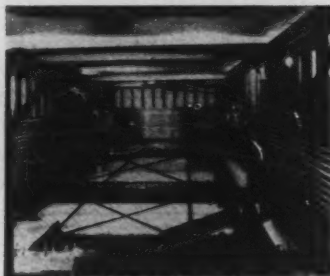
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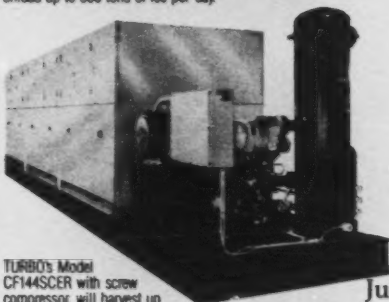


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COVER: Demos Xenos, stew chef at New York's Oyster Bar and Restaurant prepares a bowl of oyster stew. He has been mixing the rich ingredients since 1964, when a bowl sold for \$1.65. Today's price is \$6.25. Photo by Jon Laitin.

From the Editor

We believe that the seafood industry has the potential to double its share of the domestic protein market and substantially increase export markets by the year 2000. It is this underlying optimism in the industry that has led us to begin publication of Seafood Business Report.

With beef facing soaring production costs, the opportunity is apparent. But success, if it is to be achieved, will not come easily. Seafood has made tremendous progress at the foodservice level. That momentum must continue.

In retail, the industry still needs to gain the trust of the American consumer. An entire generation of Americans must be convinced that it is possible to purchase seafood of consistently high quality that can easily be prepared at home. The operations of those retailers whose product is marginal must be upgraded to provide high quality at a reasonable price. Marketing efforts must become more sophisticated. The industry badly needs a strong, well-financed generic marketing effort to sell all seafoods to the American public.

We believe Seafood Business Report will play an important role in helping the industry grow, expand and succeed. Seafood Business Report offers fresh, new ideas on how to market seafood and how to inspire and maintain consumer interest.

Seafood Business Report treats the industry in the context of a competitive environment in which seafood can compete against poultry, beef and pork — and win!

Seafood Business Report covers the rapidly developing technology for seafood and tells of the improvements that will lead to a product of consistently high quality from the vessels to the consumers' tables.

The national data in our "Seafood's Future" section will keep you posted on important changes in inventories, supplies and prices. For those who have followed the Pacific Packers Report for years, we will continue to bring you our complete package of West Coast pack data in the spring issue of Seafood Business Report.

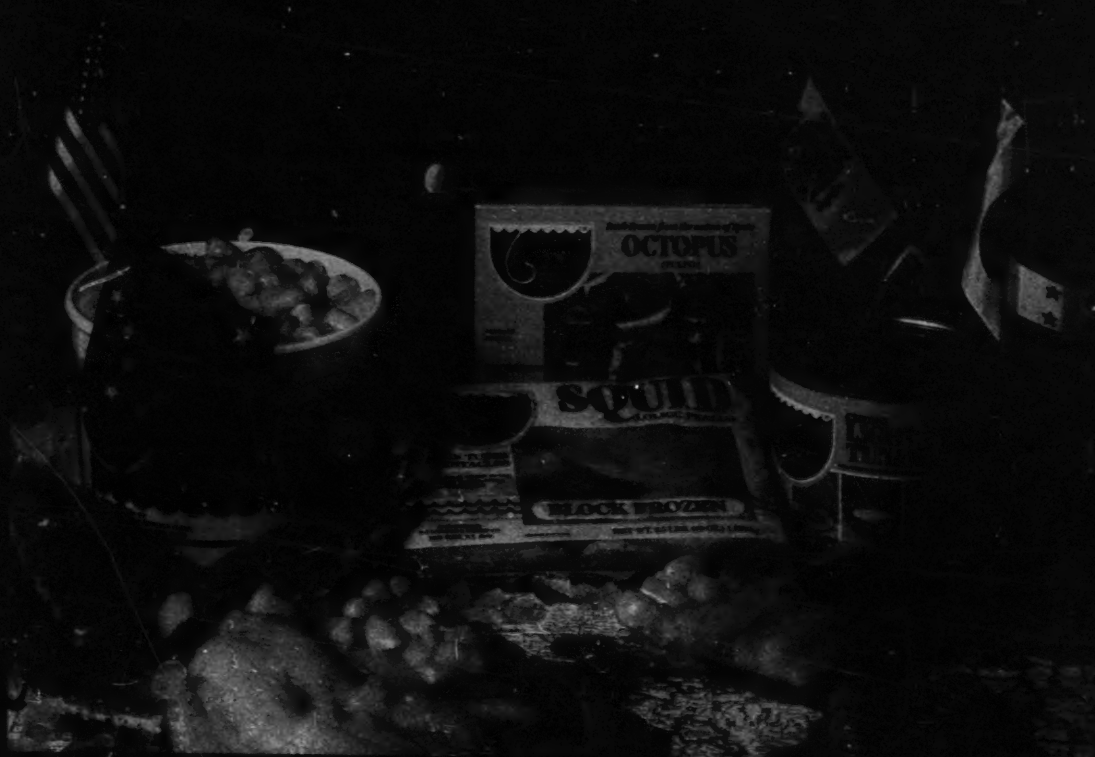
Now that we have told you what to expect of Seafood Business Report, we would like to know what you think of the magazine. And we would like to hear suggestions of topics you feel Seafood Business Report should cover for the industry. Please address your comments to Seafood Business Report, 4215 21st Avenue West, Seattle, WA 98199.

Nancy Hasselback

Nancy Hasselback
Editor

We wish to express our thanks to all processing company officials who have furnished production data for this report. As well, we thank the state and federal agencies for their assistance in providing data.

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SEAFOOD'S FUTURE

First Half Blues— Second Half Recovery

After an extremely harsh winter, the seafood industry may look forward to spring supplies, but competition for consumers' precious dollars will be fierce. Increased sales hinge on disposable income being boosted by economic recovery.

The economic climate is poor for seafood consumption. Dollars are spent for less expensive protein sources. While the administration clings to its forecast for improvement in the spring, private economists, discouraged by recent economic indicators, see recovery delayed until the second half of the year. Six of the nine leading indicators declined in January, the ninth consecutive month of decline. The unemployment rate that month registered 8.9 percent. An increase to 10 percent is not unlikely

before recovery, admit government economists. The figures are discouraging for consumer spending in the short term.

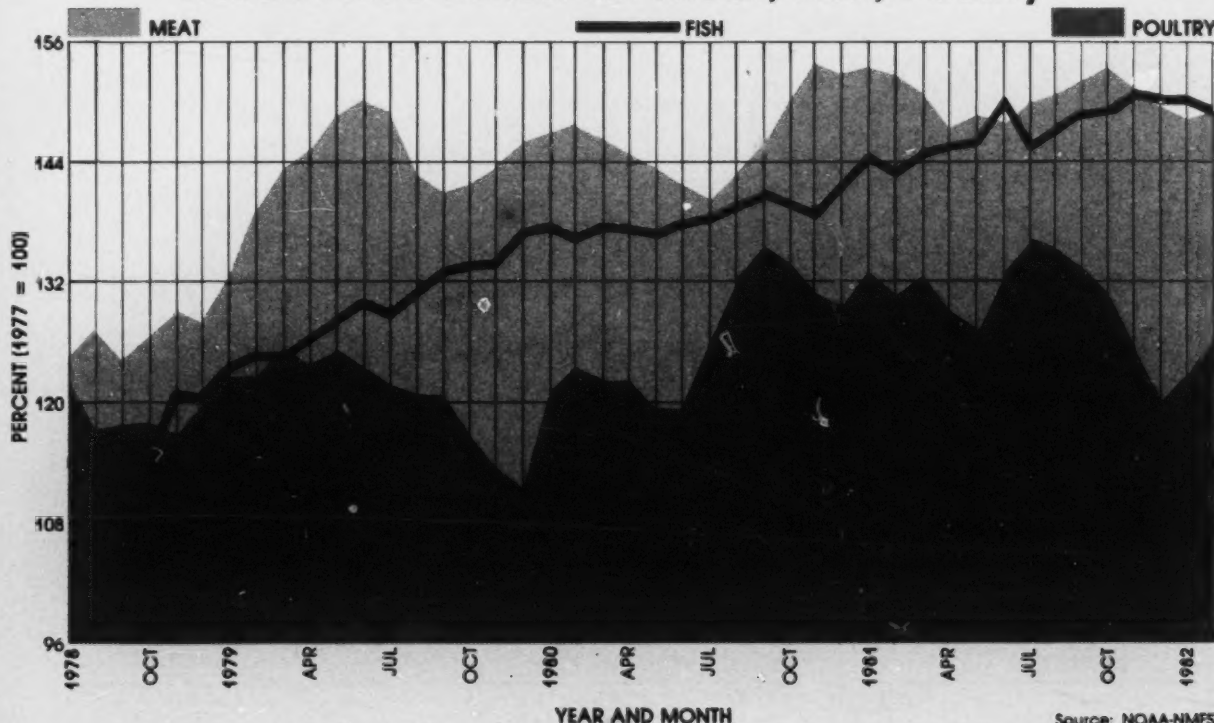
A pattern of eventual improvement may be forecast by looking at the seven recessions since World War II. The index of leading indicators, a barometer of future economic activity, usually begins to rise two or three months before business activity revives. Once recovery begins, unemployment will slowly subside and inflation will slowly rise if old patterns are followed. Most recoveries have been brisk and long-lived.

Food inflation, which soared to double-digit figures in '79 and '80, has moderated considerably. Last year, food prices rose 9 percent. For 1982,

predictions range from an increase of 5 to 9 percent, with most analysts agreeing to a 6.5 percent rise. That would be the smallest increase since 1977. For restaurants, the USDA predicts prices will increase 8 percent, while grocery store prices increase 6 percent. Demand for food products has been weak, pressuring producers to limit price increases.

On an optimistic note, economists still see a strong recovery in the second half of the year, counting on gains in personal income stemming from Reagan's 10 percent cut in tax rates which takes effect July 1. The economy is expected to grow nicely during the second half and throughout 1983. Whether those extra dollars from tax cuts will be spent in res-

Retail Price Index for Meat, Fish, Poultry



Source: NOAA-NMFS

taurants and supermarkets is questionable. Attractive tax breaks for savings programs may divert surplus disposable income.

Interest rates, temporarily on the downswing are expected to reverse direction and climb with spring demand for operating credit. The U.S. dollar has remained strong against foreign currencies and is expected to strengthen, putting a damper on seafood exports from the U.S.

Japanese buyers will offer lower prices for the West Coast crab and salmon pack if the yen continues to weaken. In early March, it had weakened to 234 yen to the dollar, after beginning the year at 218. Last year the exchange rate sank as low as 247 yen, but in late summer a belief that U.S. interest rates had peaked touched off a recovery. By August, only 214 yen bought a U.S. dollar and salmon exports to Japan soared. European currencies are also suffering from the dollar's strength, discouraging heavy buying of U.S. product.

	April- June	July- September	October- December
Broilers	-2	+1	+3
Pork	-10	-12	-8
Beef	+2	+2	+3
Turkeys	-5	-4	-4

Percentage supplies available per capita 1982 compared with 1981.
Source: Broiler Industry

Other protein sources are suffering along with seafood from the stagnant economy and harsh winter weather. Southeastern and Midwest broiler producers were hit unusually hard in January, dropping supplies 2-3 percent below levels a year earlier for the February to April period. Marketings in the second half of the year will be higher, a result of lower feed costs and active consumer demand. Wholesale prices should increase and peak in July and August at 50 cents per pound and decline in the fourth quarter to 46 cents. USDA predictions show a 3-5 percent increase in all poultry prices expected for 1982 over 1981 averages.

Beef supplies will increase this year, but mostly in the second half. Cold weather held back slaughters early in the year. Those cattle will supplement supplies later in the season. The Lenten season is traditionally a weak period for red meats, and consumers will steer clear of expensive cuts. Low demand will suppress prices in the first half, but meat prices should recover later in 1982. For the year, cattle prices are expected to average slightly higher than in '81 with production increasing close to 5 percent. Production increased 2 to 3 percent in 1981. The beef industry will begin a high-budget advertising campaign in March with the slogan, "Somehow,

nothing satisfies like beef."

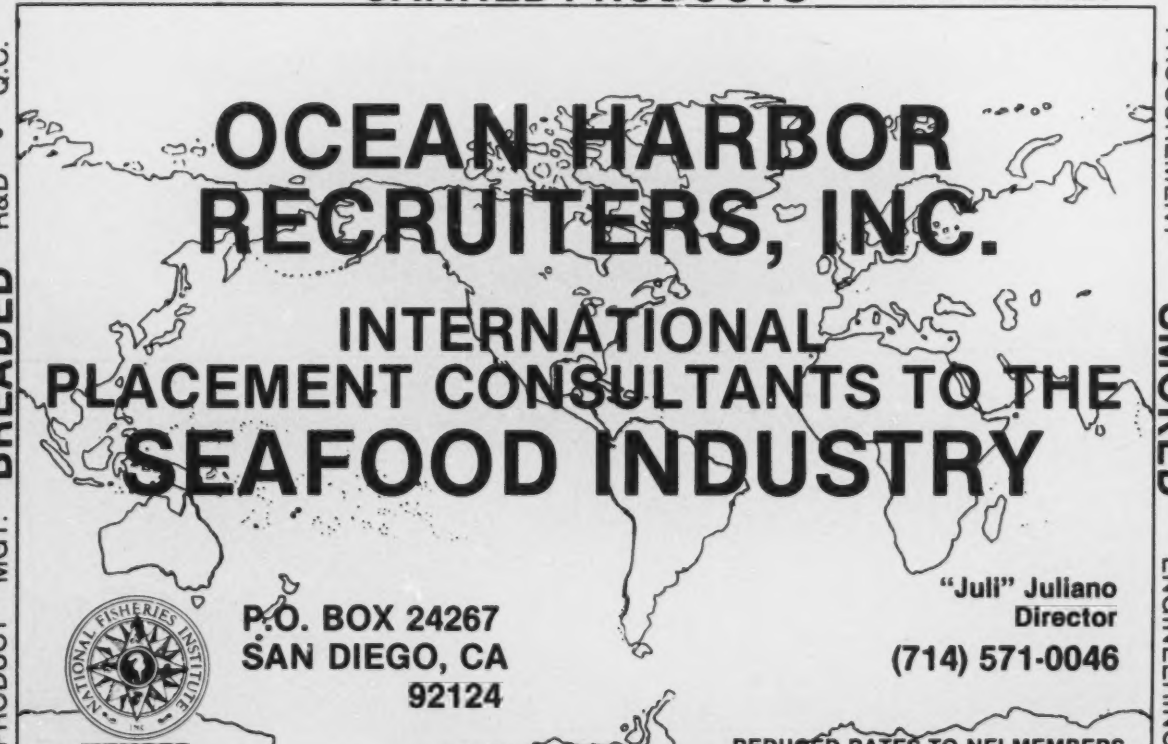
Winterkill was especially severe for hog breeders this year, and production is expected to decrease drastically. More hogs going for breeders rather than to slaughter will also contribute to the expected decline of around 10 percent. Still, pork supplies are unusually large. 1981's production dropped 6 percent from 1980 but was the second largest output on record. Despite lower supplies, low incomes will hold prices close to 1981 levels.

Seafood's role in consumers' diets will be swayed by the ups and down of these protein sources. Poultry and beef supply increases will be most prevalent in the latter half of the year. Unfortunately, supplies of seafood will follow similar patterns. Early '82 frozen holdings are down 20 percent from '81. Shellfish holdings are down 26 percent, mostly due to shortages of king crab, spiny lobster and shrimp. Scallop inventories are up 162 percent, partially offsetting the decline. Saltwater fish inventories are down by 14 percent. Weather problems earlier this year have not replenished the declining frozen inventories. Canned inventories of both tuna and salmon are high and available at reasonable prices with discounts offered by packers.

The consumer price index for all

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seafood is expected to increase 8 to 9 percent in 1982, according to USDA estimates. That represents the same increase as in 1981 but a lower increase compared to previous years. The energy-intensive fishing industry will be aided by softening fuel prices and lower inflation.

A coordinated nationwide campaign by Catch America to promote seafood will soon be underway, with special emphasis from May through October. Seafood processors, distributors and buyers may take advantage of promotional activities by working with the regional fishery development foundations. Retailers and consumers in more than 20 major cities will be targeted for two-week campaign periods. This year's theme is health, nutrition, fitness and balanced diet through eating seafood. Past efforts have seen positive results in terms of increased sales, greater consumer awareness and creation of new distribution networks. Regional and species-oriented promotion efforts will also boost seafood sales, both at retail and foodservice levels.

The outlook for seafood growth in restaurants is outstanding, especially for the latter half of the year when consumers' expendable income is expected to pick up. Seafood's share of the foodservice market has been increasing dramatically, especially in dinner house restaurants where seafood is ordered 25 percent of all occasions, equivalent to the number of times french fries are ordered in all restaurants. Total foodservice sales will increase 1.3 percent, a significant gain over 1981's increase of 0.4 percent. Menu prices will continue to moderate, rising 8.4 percent this year as opposed to 9.3 percent in 1981.

The biggest surge will be in the commercial sector of foodservice rather than in the institutional group. Within the commercial category, fast food or limited menu restaurants are expected to post the most significant gains. NRA projects 12 percent growth in sales for this category, a real growth change of 3.6 percent. Evidence of the potential for limited menu restaurants may be seen in the rapid expansion of major seafood chains, such as Sea Galley, Skipper's, Red Lobster and Long John Silver's. Most have plans to add franchises and company-owned units this year despite high interest rates. At least one company, Sea Galley, has purchased production operations to secure supply.

Fast food restaurants spend only 7.3 percent of their total dollars on seafood. For full service restaurants, that figure reaches 15.1 percent according to a survey by *Restaurants and Institutions*. These data reflect the reliance on fish blocks by fast food chains, while full service restaurants

depend on supplies of fresh fillets and shellfish.

Demographic and social trends that contributed to foodservice's share of the food dollar increasing from 33 percent in 1970 to 37 percent in 1981 will continue throughout the decade. Currently, 51 percent of wives hold jobs and 60 percent are expected to be working by 1990, contributing to more affluent two-income households. Smaller families and single persons constitute an increasing share of households. The baby boomers are steadily filling out the ranks of ideal restaurant customers, those who fall in the 25 to 44 age group.

More people would eat out if they could afford to, concludes a recent NRA study. Thus, if disposable incomes increase the predicted 11.2 percent later this year, more dollars will be spent in restaurants. Increased restaurant sales mean increased seafood sales.

One trend to be taken advantage of is the recent popularity of grilled seafoods in restaurants. Another is the proliferation of take-out food outlets. Their prepared meals are one step above fast food operations. Development of innovative seafood meals easily packaged and reheatable should produce results.

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COUNTRY	COD		FLOUNDER & TURBOT		CUSK, HADDOCK HAKE & POLLOCK		OCEAN PERCH	
	1980	1981	1980	1981	1980	1981	1980	1981
Canada	43.8	68.6	39.3	57.1	16.6	20.5	25.1	39.3
Iceland	65.5	56.2	1.9	1.4	18.6	13.5		
Norway	6.3	5.1			5.9	5.8		
Denmark	4.4	5.2			4.6	3.4		
Other	4.6	6.5	28.4	22.2	1.8	2.9	13.3	15.6
TOTAL	124.6	141.6	69.6	80.7	47.5	46.1	38.4	54.9

Source: NMFS

United States Imports of Fish Blocks by Country

(THOUSAND POUNDS)

COUNTRY	1980	1981
Argentina	15,846	10,741
Canada	120,507	117,307
Chile	593	2,678
Denmark	18,123	29,108
Greenland	13,245	15,223
Hong Kong	279	—
Iceland	59,220	48,705
Japan	10,730	8,625
Korea, Rep. of	42,332	40,955
Miquelon	337	1,401
Netherlands	—	4
Norway	20,761	28,366
Peru	2,585	23
Poland	15,504	15,963
Rep. South Africa	566	286
Taiwan	37	86
United Kingdom	1,085	455
Uruguay	10,609	13,839
USSR	286	131
West Germany	307	1,394
Other	3,069	8,836
TOTAL	336,121	344,116

Source: NMFS

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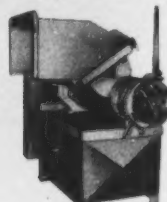
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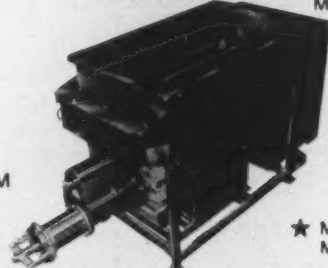
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United States Imports of Fish Blocks by Species

(THOUSAND POUNDS)

SPECIES	1980	1981
Cod	160,417	157,925
Flatfish	13,400	12,364
Haddock	31,281	37,627
Pollock	62,666	68,956
Whiting	36,865	29,832
Ocean Perch	3,899	4,666
Minced	21,028	25,925
Other	6,565	6,821
TOTAL	336,121	344,116

Source: NMFS

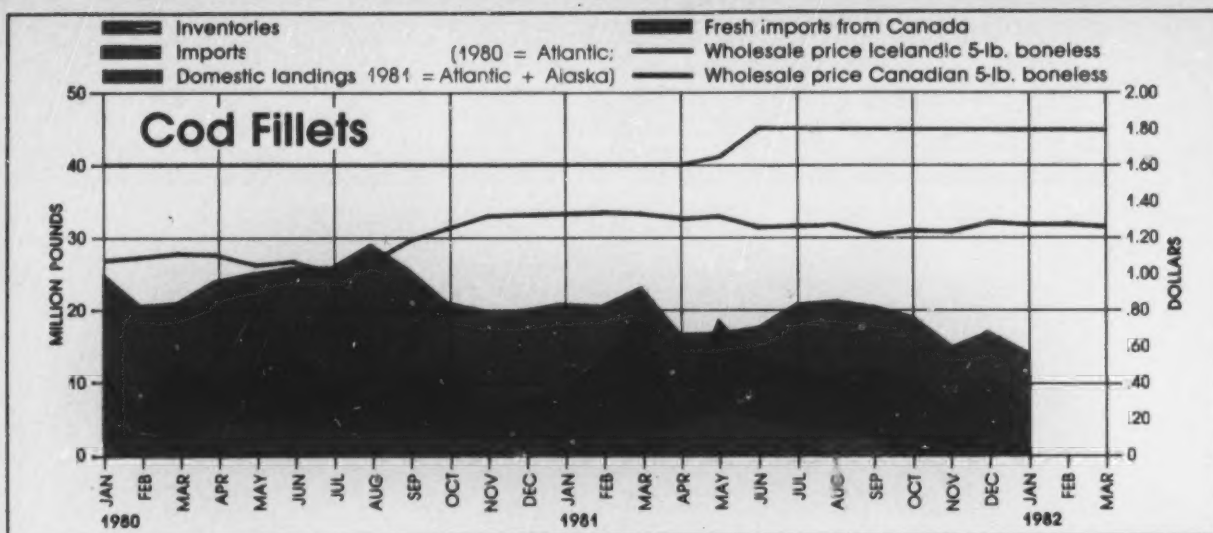
Fresh Fish Landings at Major New England Ports

(MILLION POUNDS)

SPECIES	1980	1981
Haddock	39.2	39.1
Cod	70.1	54.0
Cusk	1.1	0.8
Hake	2.0	3.3
Pollock	19.2	18.2
Ocean Perch	19.2	16.1
Blackback Flounder	14.0	15.6
Lemon Sole	10.6	6.1
Sand Dabs	3.4	2.8
Grey Sole	1.3	1.2
Fluke	1.3	2.6
Yellowtail	27.9	22.0
Mixed Flounder	19.3	21.5
Whiting	17.7	17.9
Scallops	12.8	16.5
Mixed	52.3	54.2
TOTAL	311.4	291.9

*Includes Boston, New Bedford, Gloucester, Provincetown, Point Judith, Newport, Portland, and Rockland.

Source: NMFS



GROUNDFISH

• Production patterns prevalent in 1981 will not be repeated in 1982. Last year the Canadian cod quota was caught early in the year, causing a glut on the market and putting pressure on flatfish stocks. Harsh winter weather in 1982 has continued into the spring, holding boats in ports. Canadian processors, who shut down several plants last summer, are now staggering sailings to ensure a more even supply.

Severely short supplies of all groundfish, with the exception of ocean perch, were faced by distributors late in 1981 and into 1982. Renewed supplies have trickled into markets spurred by Lenten demand. A brighter outlook is seen by the industry, encouraged by rapid growth in fast food establishments. Prices have remained firm for most species and are expected to increase a few cents with healthier demand toward the end of the first half. In the meantime, a holding pattern is expected.

The outlook for North Atlantic groundfish supplies is good. Landings overall should be equal to, if not greater than, landings in 1981. Cod production for all European countries except West Germany and Greenland increased in 1981. Iceland's 1982 cod catch is expected to remain the same as in 1981 at 450,000 metric tons. Norway's cod harvest showed a slight increase last year but may have reached maximum sustainable yields. The harvest could be less this year.

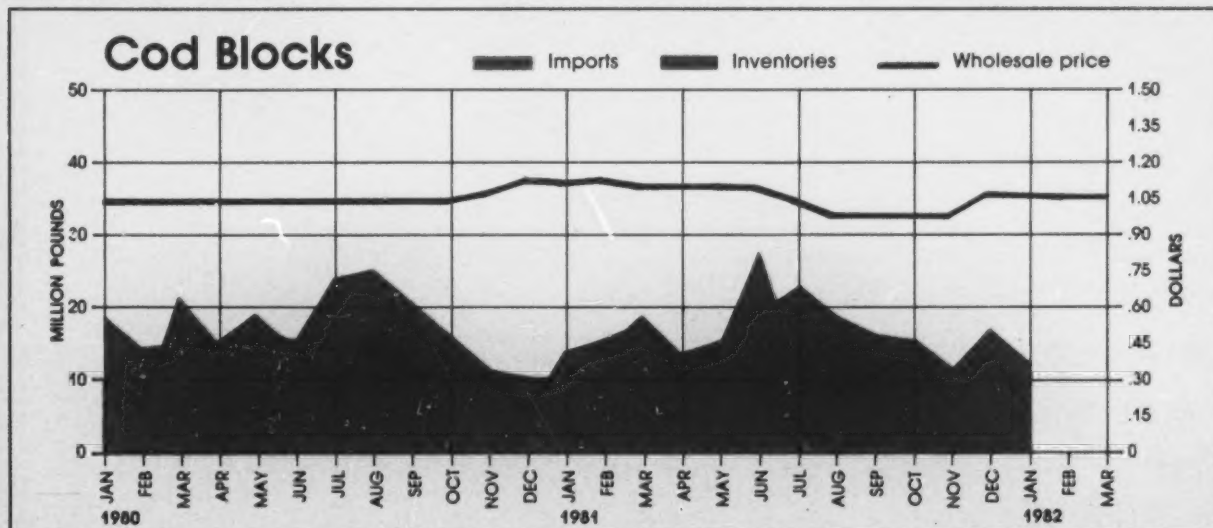
Cod stocks in Canada have great potential. The total allowable catch in 1980 was 458,000 metric tons. Projections for 1985 show a possible catch of 711,000 metric tons.

• Several situations bear watching. The Canadian government has formed the Kirby task force to look into the possibility of merging the four major producers into two marketing groups. All are currently in financial trouble. Consolidation would cut costs and funnel Canadian supplies into two marketing groups, eliminating some of

the brand competition that has taken place between companies. In early March, the issue was in the initial stages of investigation, and a resolution was not expected for several months.

• Strong demand for fresh groundfish is being fulfilled with increased imports from Canada coming in by truck and by plane, and by air shipments from Iceland.

For New England fishermen, an interim groundfish plan has been approved which eliminates quotas and trip limits and instead relies on minimum mesh sizes and fish lengths for stock conservation. How this plan will affect the market depends on the date it takes effect. Processors would like to see it go into effect immediately, but the NMFS was not prepared to do so in March. Fishermen feel that if the plan cannot be implemented immediately, they would prefer that action be stalled until the end of the summer to avoid a glut in the marketplace when landings are normally high.



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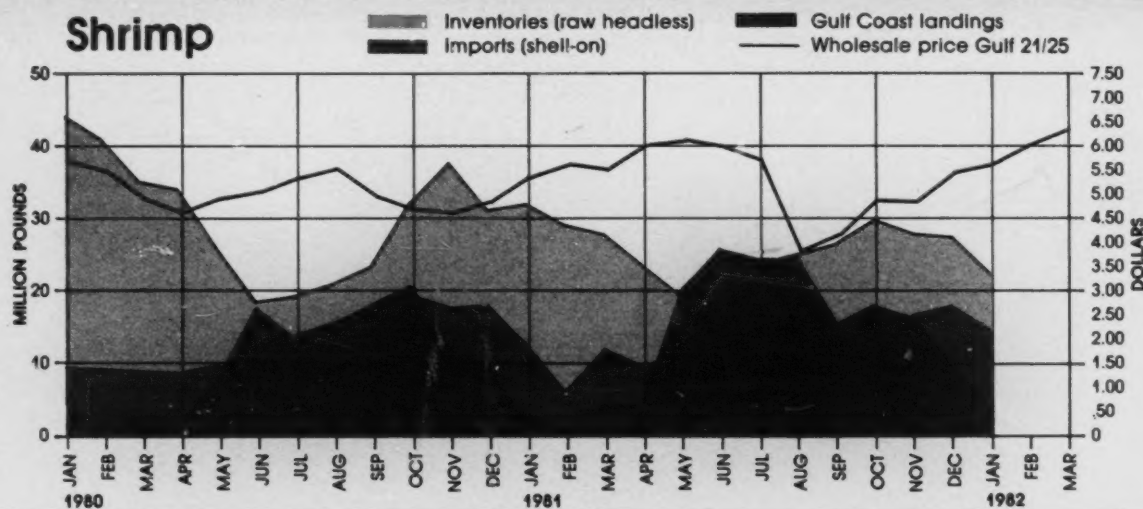


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Shrimp



SHELLFISH

• Because king and tanner crab are in low supply and commanding skyrocketing prices, consumer preference is turning toward shrimp and scallops.

Although supply of shrimp was substantial in 1981, inventories are extremely low. Gulf Coast and South Atlantic landings in 1981 rose to 177 million pounds, compared to 152 million pounds in 1980, and were 12 percent above the average of the past five years. Inventories of all shrimp in early February totaled 56.5 million pounds, the lowest level since February 1976. Very little production is expected until May, and carried-over inventories will be small.

Both processors and restaurants are profiting from a strong market, with prices moving up on all sizes. Conservative buying has prevailed, with company inventories being held only at levels necessary to fulfill sales commitments to avoid paying outrageous interest rates. Prices are expected to increase until May, when they will level out, but possibly not before reaching record highs for shell-on sizes. Higher prices will cause restaurants to reduce portion sizes as a means of economic adjustment.

Anticipating Louisiana's spring season, shrimpers are holding their breath, hoping the melting winter snows will not cause excessive fresh water to flood into salt water. An unhealthy mixture will reduce landings and set back this year's canned production. Domestic demand for canned shrimp is sluggish. Production in 1981 was down 40 percent from 1980 levels.

Breaded shrimp has staged a come-back. Production and sales were down for a few years through 1980, but 1981 production increased over the previous year. Consumption of

breaded shrimp in 1981 increased 4 percent over 1980, the first increase in several years. One processor noted a 15 percent increase in demand for his breaded line. Efforts are underway to develop new products.

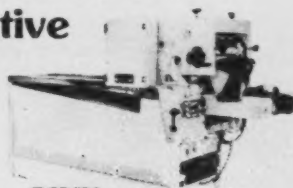
Previous declines in demand for breaded shrimp have been blamed on excessive breeding. The National Shrimp Breeders and Processors Association is working with the Food and Drug Administration in establish-

ing guidelines to prevent excessive breeding.

Slack in domestic landings has been taken up by imports. Aquaculture production, especially in Ecuador, is booming. Mexico, where farming operations financed by the Coca-Cola Company are just getting underway, currently leads in shrimp imports to the United States, with Ecuador a far second. However, Ecuadorian exports to the United States are expected to

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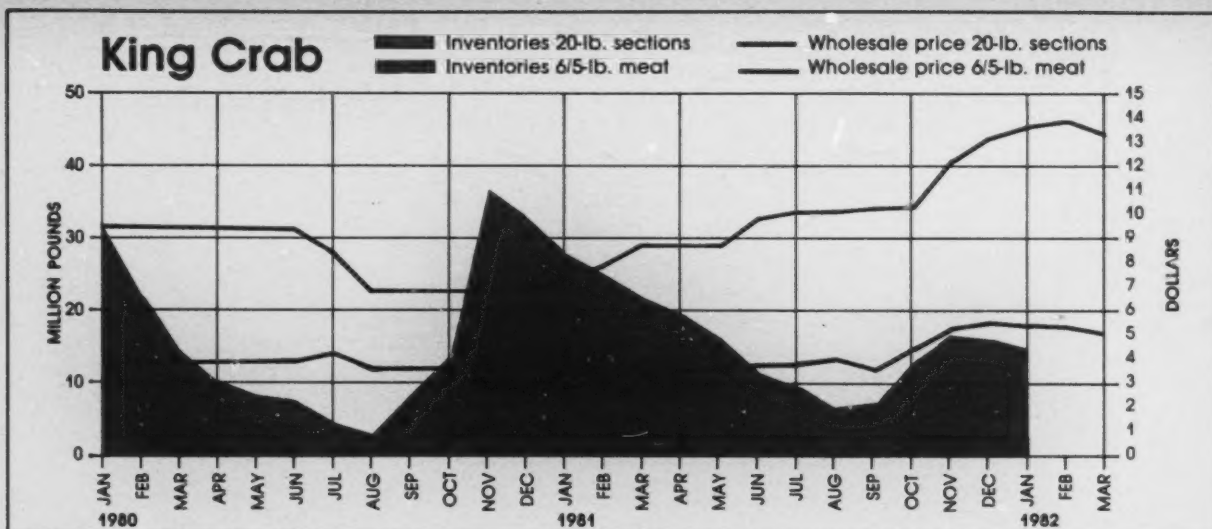
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surpass Mexico's in two years if current growth patterns prevail. Exports from Ecuador are expected to reach 30 million pounds in 1982, a 20 percent increase over 1981.

One Ecuadorian firm, Empacadora Shayne, has become the world's largest exporter of farmed shrimp. Production there is expected to double this year. Prices were lowered 80 cents last year to \$2.95 per pound, with further decreases likely as production increases.

• "Scallops are in the doghouse now," claims a major distributor. Inventories in February were up 161 percent over a year ago. Calico scallops from the Carolinas and Florida have moved in to undercut prices for George's Bank and Alaska sea scallops. Wholesale prices for the calicos dropped as low as \$2.85 to \$3.15 per pound in March, compared with \$3.75 two months earlier.

A substantial drop in George's Bank production is expected in 1982.

The older age classes have become depleted and the count per pound is on the rise. Florida had a bumper crop of calicos in 1981 — 13 million pounds compared to 1980's 3 million — and 1982 may be another good year. The number of vessels entering the fishery has increased five-fold, prompting the South Atlantic Fishery Management Council to develop a federal management plan.

• Canadian suppliers are gearing up for production of snow crab in order

to take advantage of scarce supplies from Alaska. Landings increased 25 percent in 1981 and biological data suggest the stocks can sustain higher catches.

A good supply of red crab is expected from the deep waters off of the East Coast. Prices will be higher, gauged by Canadian snow crab prices. Red crab salad meat will be priced 25 cents below Canadian 60/40 snow crab meat.

For more information on West Coast shellfish, see page 49.

Gulf Coast Shrimp Landings

(THOUSAND POUNDS)

YEAR	FLORIDA (W. COAST)	ALABAMA	MISSISSIPPI	LOUISIANA	TEXAS	TOTAL
1977	20,685	15,657	6,610	66,043	57,909	166,904
1978	18,664	13,244	5,193	66,222	52,907	156,230
1979	17,643	12,852	5,349	49,737	42,491	128,072
1980	15,526	9,514	3,735	57,581	46,408	132,764
1981	21,107	13,166	4,840	69,522	59,277	167,912

Note: 1981 data are preliminary.
Source: NMFS



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Rebellion at Mrs. Paul's: Franchisees Hold Back Royalties, Threatening Arthur Treacher's Survival

It appears that the two-year feud between Mrs. Paul's Kitchens and Arthur Treacher's Fish and Chips is finally coming to a head in the federal courts of Pennsylvania.

Mrs. Paul's, a producer of frozen fish cakes, acquired Arthur Treacher's fast-food fish and chips chain in 1979 from the Florida-based Orange-Co.

"The whole feud began before Mrs. Paul's even acquired Arthur Treacher's," says Henry Siedzikowski, an attorney with the firm of Dilworth, Paxson, Kalish and Kauffman, which represents Mrs. Paul's and their restaurant subsidiary. "A group of about 25 of the largest franchisees in the system had been involved in disputes with Orange-Co. and were withholding millions in royalties when we acquired Arthur Treacher's in 1979."

Arthur Treacher's franchisees have long alleged that their parent companies, including Mrs. Paul's, have not "earned" their royalties, not providing enough advertising and other support services to warrant their being paid. The royalties not outstanding total about \$14 million.

One of the most militant Arthur Treacher's franchisees has been Agostine Malerba, a Philadelphia businessman, who owns six of the fish and chips restaurants. Last August, Malerba covered all his Arthur Treacher signs with black tarpaulins, threw out the trademarked cups and napkins, refused to pay the royalties he owed, and re-opened his doors with two other ex-franchisees as Gulliver's Fish and Chips.

Malerba claims that Mrs. Paul's purchased the restaurant chain in 1979 only in order to have a ready-made market for its frozen fish cakes. Malerba and many other franchisees would have none of that, Arthur Treacher's having long attributed its success to the deep-fried Icelandic cod and secret batter it uses. In a recent *Wall Street Journal* story, Malerba was quoted as saying that the parent firm's "dream" was to "put Mrs. Paul's products in restaurants all over the world. We were supposed to heat up (the frozen fish cakes) like you do at home."

So Malerba and a number of other disgruntled franchisees formed the Arthur Treacher's Franchisee Association in January 1980, a year and a half before many of them left the chain in disgust. With the organized opposition, the number of royalty holdouts rose from 30 percent of the franchi-

sees to about 90 percent in less than two months. Mrs. Paul's subsequently initiated extensive litigation against the biggest royalty holdouts in the association, Malerba included.

On July 30, 1980, a federal district court judge handed down his verdict: pay up the royalties, period. The franchisees' association appealed the verdict and moved for a stay of the ruling until the U.S. Court of Appeals for the Third Circuit could formally hear the case.

"Acting on only 24 hours' notice, without the necessary preparation," according to attorney Siedzikowski,

"the Court of Appeals issued a preliminary injunction that stayed the lower court's decision," pending a formal hearing on March 18, 1982. The appeals court also gave the franchisees a choice: take down your signs, forget about paying the royalties until your cases for withholding them can be heard sometime late in 1982, and go your separate ways; or keep the trademark and secure your owing royalties with a bond for the time being. Malerba and dozens of others chose the former. Down came the signs.

(continued on page 99)

Bright Future for Seafood — Watch out for Beef and Poultry

Economic signals point to strong seafood sales through 1982 at both retail and foodservice levels and continued real growth — if the nation does not slip deeper into the recession, and if large supplies of beef and poultry do not push seafood around in the market place.

The recession may be the least of the two potential problems seafood faces in 1982. Despite the nation's economic woes, restaurant customer traffic increased in 1981 for the first time in three years, according to the National Restaurant Association (NRA).

"A slowdown in the rate of inflation, along with an increase in disposable personal income and stable gasoline prices, improved consumers' economic well-being in 1981 and contributed to renewed growth in the foodservice industry," NRA reported.

CREST (Consumer Reports on Eating Share Trends) sales, which represent the commercial sector of the foodservice industry, posted a gain of 11.7 percent during the 12-month period ending August 1981, a vast improvement over the 4.8 percent advance posted in 1980.

In the September 1980 through August 1981 period, family restaurants posted sales gains of 15.9 percent, NRA noted. Fast food restaurants posted gains of 13.8 percent.

How large supplies of poultry and beef in 1982 may affect seafood is uncertain. Supplies in 1982 are expected to hold down beef price increases in the 5-to-7-percent range and poultry price increases in the 3-to-5-percent range, according to the USDA.

At the same time, seafood prices are expected to increase 8 to 9 percent. If these predictions prove correct, 1982 would be the third consecutive year seafood price increases have remained substantially above those for poultry and beef.

While NRA does not predict impacts for seafood, it does predict that beef and poultry will continue to cut into pork's market share because of pork's expected 1982 price increases of 8 to 11 percent (only slightly above the predicted price increase range for seafood).

A bright, long-term future for seafood is seen as a possibility in a recently completed study by the Seareach Corp. of Boston for the NRA, the National Fisheries Institute and the National Marine Fisheries Service.

"Where high quality fish has been introduced into a new market with a concerted promotional effort and a good menu presentation, increased sales have been successful in all cases. Whether it be a million dollar, nationwide fish promotion as with the McDonald or Burger King chains or a well-presented regional or citywide promotion for local chains or individual restaurants, promotion programs that we have encountered have in all cases dramatically increased sales," Seareach noted.

Heightened public consciousness of nutrition and the value of seafood, increased sales of fish sandwiches, eating out trends and more sophisticated promotion of seafood are factors which point to continued real growth in seafood sales, the study noted. □

Hot Seller: Seafood Boosts Restaurant Profits

Seafood is one of the hottest selling menu items in the foodservice industry. And with proper promotion and quality products, seafood sales will continue to grow, predicts a study recently completed by Searach Corp.

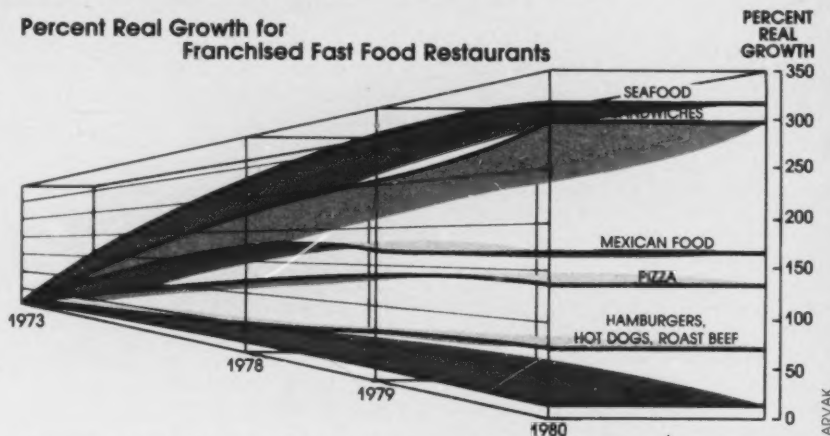
"Over the 1980 restaurant year, Seafood restaurants experienced an average increase in after-tax profits of 65 percent, the second highest in the entire industry, behind Mexican food-service establishments," Searach noted in its study commissioned by the National Restaurant Association (NRA), the National Fisheries Institute and the National Marine Fisheries Service.

Exceptional growth areas in seafood foodservice operations have been fresh fish restaurants and fast food operations. In 1981, Searach said, fresh fish restaurants across the country, such as the Hungry Pelican in Louisville, Ky., Pelican Pete's in Boulder, Colo., and Ray's Boathouse in Seattle, experienced strong growth.

For the fast food market, Searach foresees a continuing strong market for foreign blocks and fillets, "because of the ever growing demand we have evidenced and the lack of present capacity to freeze a substantial amount of product in the U.S. industry."

Other evidence of seafood's strong popularity is found in the CREST (Consumer Reports on Eating Share Trends) data published by NRA. Seafood is ordered 25 percent of the time by patrons of dinner houses, compared to 10.6 percent of the time for steak. □

Percent Real Growth for
Franchised Fast Food Restaurants



The sale of fish in franchised fast-food restaurants increased 600 percent from 1973 to 1980 to more than \$700 million. Adjusted for inflation, real growth (above) was more than 300 percent.

Source: Searach

Dungeness Up for Promotion

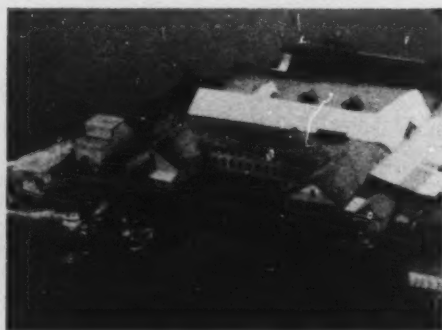
Dungeness crab will receive a boost through a promotion campaign scheduled for the National Fisheries Institute's annual convention in New York, April 21-24. The Oregon Dungeness Crab Commission intends to create a gourmet market for Pacific Dungeness, a shellfish that rarely travels past the Rockies. The Alaska Seafood Marketing Institute has contributed \$10,000 toward the campaign.

While conventioners talk about seafood promotions, the Commission will be actively campaigning with table tents, recipes, ad slicks and

cracking demonstrations. Afterward, the New York Hilton Hotel, convention site, will run Dungeness sections as a table-tented special for two weeks. "We don't want to see Dungeness going into king and snow crab markets," says Nancy Fennel, public relations director for the Oregon Dungeness Crab Commission. "We want it to create its own market."

The promotion effort is in anticipation of large landings of Dungeness two or three years from now. Supplies are expected to be limited for the next couple of seasons. □

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"Seafood USA!" National Campaign Offers Consumers "A Better Choice"

Seafood has moved into the big league to compete — by means of national generic promotional campaigns — against beef and poultry.

The question remains: Can seafood compete head-to-head against something like the \$18-million promotional budget enjoyed by beef producers?

"We're nickel and dime-ing it," said Diane Boratyn, acting chief of consumer affairs for the National Marine Fisheries Service and Catch America organizer, whose budget has been cut from \$1 million last year to about \$500,000 this year.

"If we had \$10 million to \$20 million, we could do a lot to improve the sales of seafood here and overseas. And we would see more capital investment here at home to supply that product.

"Eventually, it [promotion] has got to start here at home. Something like a marketing council with industry backing will have to do it," Boratyn said. "You can't leave it forever to government. Witness what's happening now with budget cuts."

Boratyn's comments should not be read as disapproval of the Catch America program, which she believes is providing significant promotion for the industry. Last year, for example, the \$1-million Catch America program bought an estimated \$7 million in media exposure and reached an estimated 125 million Americans.

This year, the challenge for Catch America — which has the slogan, "Seafood USA...a better choice!" — is how to get more bang for fewer bucks. With the cooperation of NMFS, NFI, FMI and the five regional fisheries development foundations, the approach this year is to decentralize the program and solicit industry participation, especially at the broker and distributor levels.

"We're striving for the entire educational message," said Kerry Muse, executive director of the Mid-Atlantic Fisheries Development Foundation. "We're doing retail seminars to educate the man behind the counter about differences between species, what is in season, how to prepare it, how to cook it, the whole nine yards."

The Mid-Atlantic Foundation is also conducting educational seminars for cooperative extension personnel and distributing kits for home economics teachers.

Each of the five regional fisheries development foundations is targeting



The Alaska Seafood Marketing Institute tempts foodservice buyers with Alaska's bounty in trade publications. Part of this year's budget will go to consumer magazines for canned salmon advertisements.

major markets for a media blitz. Muse's foundation is sending a 15-member marketing team to conduct radio and television programs and in-store demonstrations in New York, Philadelphia, Buffalo, Pittsburgh and Cincinnati.

Other changes in the program include a more effective seafood-merchandising "idea" kit aimed at food retailers, testimonials from major sports figures and a strong emphasis on seafood as a better protein source for people who care about health, fitness and nutrition.

National generic promotion of seafood over the long term must be conducted differently if the industry wants to stay in the big league, Muse and Boratyn believe.

"Assessment has to come in the long term if the industry wants a more ambitious program," Muse said.

Most processors take an instant dislike to the idea of assessment for program support, Boratyn said. "But look at other marketing programs in other industries supported by assessment. They don't pay for it; it is the consumer who pays for it."

A major portion of the funding for promotion of beef comes from a voluntary 25-cent-a-head checkoff system. In Texas alone, the checkoff system is expected to raise \$1.25 million a year for the Beef Industry Council, according to the magazine *Broiler Industry*.

A model of how the national seafood industry could approach promo-

tion is developing in Alaska in the Alaska Seafood Marketing Institute, which is seeking support from processors through a .2-percent assessment.

To boost sales of all species caught in Alaska waters, ASMI spent \$800,000 for promotion in 1981. It is receiving a total of \$2 million for fiscal year '82, and Governor Jay Hammond has recommended \$2.74 million for ASMI funding for fiscal year '83.

But the long-term future of ASMI and the level of industry participation hinges on an assessment vote this spring.

"I think the chances are very good for passing," said Eric Ekholm, executive director of ASMI. "I have an 18-member board of directors all from the industry. They are the ones who voted on it, or at least voted to put the levy out. They represent a big part of the strength of the industry."

Regardless of the vote, ASMI is moving ahead in 1982 with a consumer advertising program geared to move the expected record 1982 salmon pack.

"We are also planning a butcher training campaign, utilizing a respected butcher and an audio-visual show," Ekholm said. "We will go into a city or a chain and train butchers in the preparation and sales of seafood."

Ekholm said \$5 million annually is needed to adequately promote seafood nationally with a program such as Catch America. □

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Seafood Slides on Japanese Preference Scales

Seafood's market share in Japan, the American fishing industry's most important export customer, may be in real trouble if consumer trends favoring beef and poultry continue through the 1980s and 1990s.

For centuries seafood has been the protein staple of the Japanese. With the westernization of Japan following World War II, poultry and beef became more readily available to the Japanese, and in the last two decades America's fast-food giants have made inroads into the Japanese market.

Seafood has slipped from providing 61 percent of the animal protein in 1965 to less than 47 percent in 1978.

Japan leaped from the 13th largest importer of young chicken from the United States in 1980 to the single largest importer in the first half of 1981, importing 71 million pounds for that six-month period.

Two American chicken exporters that have benefited from the changing Japanese tastes are Tyson Foods and Valmac Industries, both Arkansas producers. Valmac claims to be the single largest shipper of chicken products to Japan, according to the *New York Times*. American firms find the Japanese market especially appealing because Japanese consumers prefer dark meat, while most Americans prefer white.

Even more disturbing are consumer preference studies that show an overwhelming preference for meat among young Japanese.

In the 16 to 26 age group, meat is now preferred four to one over fish, according to Murray Hillman, managing director of the Interpublic Group of Companies, Inc., who presented the data at the third annual International Seafood Conference. Among Japanese children preferences are still more alarming; they prefer meat and fried chicken 11 to one over grilled and fried fish.

"Our experience over the years would suggest that food and beverage preferences developed early are often carried into adult life with great loyalty and intensity," Hillman said.

The Japanese seafood industry is attempting to hold its domestic market share through development of new products tailored to younger tastes, consumer food shows, and promotion of the superior nutritional qualities of seafood.

"The first set of figures almost says it all. In the six-year period for which we have data, seafood consumption

per household increased 4.2 percent, whereas meat and meat products increased by 15.2 percent," he said.

JAPAN

Consumption Per Household	1973	1978	Increase
Seafood	72 kg	75 kg	+4.2%
Meat & Meat Products	46 kg	53 kg	+15.2%

"It would appear that meat and meat products are becoming an ideal change-of-pace meal in the traditional seafood menu.

"But this chart only hints at the problem.

"This next chart illustrates the measurement of consumer preference for meat and seafood. When a cross-section of Japanese consumers were interviewed, the preference for meat exceeded the preference for fish by 10 percentage points. Where consumption is a measurement of the present, preference is a measurement of the future, and the measurement of preference suggests that a significant shift in seafood consumption will take

place in the future," Hillman said.

JAPAN

Preference of Food (all ages both sexes)

Prefer Fish	25.5%
Prefer Meat	35.0%

Preference of Food by Age

	Prefer Fish	Prefer Meat
16-25 yrs	12%	49%
26-35 yrs	27%	40%
36-45 yrs	28%	36%
46-55 yrs	31%	28%
56+ yrs	28%	22%

"But the critical indicator of the future of the seafood industry in Japan is the measurement of preference broken down by age. If we assume that the future of the seafood industry in Japan *by the preference of fish versus meat* is strongly shaped by the preferences of the 16-25 age group, where meat is preferred over fish five to one, we must conclude that, when preference becomes reality, the seafood industry in Japan will be in serious trouble." □

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People Performance

□ **ConAgra, Inc.**, Omaha, Neb., has signed an agreement in principle with the Del Monte Corporation to acquire certain assets of Del Monte's Alaska Packers Association subsidiary. Del Monte is a subsidiary of R.J. Reynolds Industries. Alaska Packers' principal product is salmon, in both frozen and canned form.

The agreement involves a majority of the operating assets of the Alaska Division of Alaska Packers Association. APA operations in Oregon, Washington, California and Kodiak, Alaska are not a part of the agreement.

Pending completion of the transfer, APA will continue its normal production, marketing and sales activities. ConAgra intends to continue operations in their present locations after the transaction has been finalized.

ConAgra is a basic food producer with current annual sales of approximately \$1.7 billion. The company has major market positions in flour milling, grain merchandising, poultry products, frozen prepared (Banquet) foods, agricultural chemicals and formula feeds. In February 1981, ConAgra acquired Singleton Seafoods, the leading U.S. producer of shrimp and other seafoods, and in July 1981 acquired Sea-Alaska Products, a major producer of crab and other seafoods. ConAgra is also a leading producer of farm-raised catfish through its Country Skillet Catfish Company.

□ **Skipper's Inc.**, of Bellevue, Wash., reports a 24 percent rise in profits in 1981 over 1980 levels. Profits for the year were \$953,000 from \$771,000. Sales increased to \$34 million from \$30.5 million in 1980. Skipper's currently owns 107 units, expected to increase 20 percent annually. Franchises, now numbering 10, will be added and will eventually equal the number of company-owned units, according to Sam Peterson, Director of Franchises. Five new franchises will bear the Skipper's name in 1982, with 10 to 12 additions in future years. All growth will take place west of the Mississippi in the United States and Canada.

□ **Radiation Technology, Inc.**, Rockaway, N.J., has acquired licensing from the State of Arkansas for an irradiator facility in West Memphis. The plant is the third such facility for the company and will be capable of processing poultry, seafood, spices and citrus.

□ **B-G Lobster & Shrimp Co.**, based at New York's Fulton Fish Market is now distributing fresh (not frozen) scallops under their Grippa Brand label. "There is definitely a greater appreciation for fresh scallops over frozen and that appreciation translates into a demand in the marketplace. And we are aiming to meet that demand," said Robert Grippa, B-G's vice president.

The fresh scallops are bulk packaged in eight-pound containers and are packed fresh daily. The bulk quantities are designed for commercial use by restaurants, caterers, retail outlets, institutions and other large-scale foodservice operations.

□ **The West Coast Fisheries Development Foundation (WCFDF)** will launch a sablefish marketing effort this spring. Seeking to educate consumers, the WCFDF campaign will include recipes, photographs, news releases, and an informational brochure.

Part of WCFDF's 1981-82 Saltonstall-Kennedy (S-K) funding package, the project will be supplemented by monies from the Alaska-based Halibut Producers Cooperative (HPC) Sablefish Marketing Project. The HPC project, managed by Greg Baker of the Alaska Longline Fishermen's Association, has received S-K funding through the Alaska Fisheries Development Foundation. HPC will contribute \$15,000 toward recipe development and food photography.

Cities targeted for promotion include Minneapolis/St. Paul, Denver, Dallas, Ft. Worth, Houston, and possibly Phoenix. WCFDF has already begun to establish marketing and media networks in Minneapolis and Denver as part of last year's groundfish campaign.

□ **Eva Berman**, formerly of Sunshine Food Sales, Inc., has joined **E & R International Seafood, Inc.**, Miami Beach. The company specializes in marketing frozen seafoods for domestic and international sales.

□ **Frigoscandia Contracting, Inc.**, Bellevue, Wash., has appointed R. Craig Wilson sales engineer for the northwestern region. Wilson, most recently manager of service and installation, will direct sales in Washington, British Columbia, Alaska and Alberta.

□ **Jonah, Inc.**, a sales and marketing company based in Bellevue, Wash., has formed a wholly owned subsidiary called Ocean Fisheries, Inc. (OFI). According to Jonah, OFI is a "production management company" and was formed in response to requests for assistance in "non-sales and marketing" areas of the business.

Scott Jacobsen will continue as vice president of Jonah while assuming additional responsibilities as president of OFI. The company's activities will include management of ongoing or new production operations; take-over management of troubled operations; construction project management; feasibility studies; project design and long-range developmental planning; acquisitions and dispositions; and coordination of production and sales management programs. According to William K. Deshler, president of Jonah and Chairman of OFI, the new company will emphasize a "hands-on" approach in its operations.

□ **Petkima AG**, headed by Conrad Wells, formerly with Ralston Purina, Inc., is an international food brokering company that recently completed the establishment of a chain of 12 offices worldwide. The company is based in Northwood, London, and will handle both human and animal food as raw materials, ingredients, or processed items.

□ **James W. Haupt** has rejoined **Ekco Products, Inc.**, Wheeling, Ill., as mid-central regional sales manager for aluminum, plastic and paper packaging and systems. Prior to rejoining Ekco, Haupt was branch manager and marketing manager for the M. Conley Co. He previously was a sales representative for Ekco.

□ **H. Thomas Austern**, legal counsel for the National Food Processors Association (NFPA) since 1933, was presented the **1982 Forty Niners Service Award** on January 30 in Chicago. The award recognizes significant contributions to the advancement of the food processing industry. The Forty Niners, an organization formed in 1949, has 100 members who represent firms providing machinery, supplies and services to the food processing industry.

□ **King Shrimp Co., Inc.**, Brunswick, Ga., elected John L. Williams vice president of marketing and ratified the election of Hugh R. Paladino as vice president of manufacturing at its annual shareholders meeting. Prior to his appointment, Williams was marketing manager, overseeing retail operations. Paladino was most recently bakery director for the Keebler Company in Atlanta.

After a record sales year, King Shrimp will expand its production facilities in Brunswick. Additional Caribbean seafoods will be marketed east of the mountain states.

□ James P. Gage was appointed executive vice president for U.S. operations for **Liquid Carbonic Corp.**, and Wesley N. Munson was appointed senior vice president and general manager, Carbon Dioxide Division, and elected a director. Liquid Carbonic supplies carbon dioxide in its various forms and produces and markets other industrial, medical and specialty gases.

□ Edward B. Rasmuson, president of the **National Bank of Alaska**, announced that the bank's year-end net income was the highest in its history, totaling \$13,466,000, or \$4.49 per share. This is an increase of 41.2 percent over the 1980 figure of \$9,537,572. Income before security losses was \$13,997,000, or \$4.67 per share. Rasmuson attributes part of the increase to a resurgence in Alaska's economy and the gains in operating efficiency in the past few years.

□ A course on "Control of Critical Points in Food Processing" will be conducted in Atlanta May 10-13 by **The Food Processors Institute**. It is co-sponsored by the Institute of Food Technologists, QA Division.

An optional statistical review will be held in the afternoon of May 10, with the basic course conducted May 11-13. Both presentations are revised and updated versions of a course recommended for food industry personnel who need to know how to recognize and control potentially hazardous food processing operations. A workshop/seminar format will aid in consideration of product quality, compliance with laws and regulations, economics, and restrictions on controls.

Cost of the course is \$50 for the optional statistical review and \$425 for the basic course. For more information, contact Dr. Jill P. Strachan, Executive Director, FPI, 1133 Twentieth Street, N.W., Washington, D.C. 20036. Phone: (202) 857-0890.

□ **Oregon Coast Seafoods, Inc.**, a member of the Ocean Beauty Group will purchase Bumble Bee Seafoods' processing plant in Newport, Ore. The plant processes shrimp, crab, salmon and other fish. Bumble Bee Seafoods is owned by Castle & Cooke Inc. of Honolulu. The Ocean Beauty Group is owned by Sealaska Corp. of Juneau, investors in seafood, forest products, water transportation and building materials.

□ **Star-Kist Foods, Inc.**, Terminal Island, Calif., has purchased a French tuna cannery from the Paulet company. The French company hopes to use the funds and processing techniques to modernize its albacore and mackerel processing plant at Douarnenez and to create 200 new jobs in addition to the existing 450 jobs at the plant. Other European countries are targeted as markets for the tuna production.

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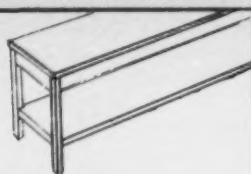
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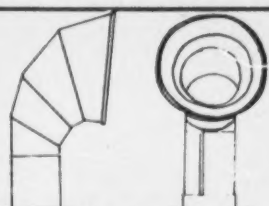
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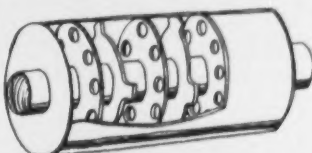
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□ Joint Trawlers (North America), Ltd., and Ocean Resources Development Co., have announced the establishment of a joint venture fishing company in Seattle. The new company, **Joint Trawlers North Pacific, Ltd.**, will conduct fishing operations in the 200-mile fishery conservation zone off Alaska, Washington, Oregon, California, Hawaii, and in the trust territories of the Pacific Islands. Gregory Dahl of Seattle, a partner in Ocean Resources Development Co., was named president of Joint Trawlers North Pacific.

Fish caught by the company will be marketed through the worldwide offices of the Joint Trawlers Marketing Group. The new company will be the third North American office for Joint Trawlers, which also has offices in Gloucester and Nova Scotia.

□ Nels V. Strandberg has been named vice president of administration and sales for **Ryan Engineering**, Seattle, a design and manufacturing firm. Strandberg previously was president and chief executive officer of Aquasea Farms, Inc., an aquaculture project for rearing pan-sized coho salmon.

□ **Marco Seattle** named Bob McMahon vice president and general manager of its shipyard division. Robert F. Allen, Marco's executive vice president, has been assigned to San Diego as vice president and general manager of Campbell Industries, one of the world's leading builders of tuna superseiners.

□ **Handy & Harman, Metalsmiths Systems Division**, Totowa, N.J., has added Harry Hanson and Marlin Bennett as western sales representatives. They will cover the states of California, Washington, Oregon, Montana, Utah, Nevada, Idaho, Wyoming, Colorado, Arizona, New Mexico, Alaska and Hawaii. Metalsmiths Systems Division designs and produces stainless steel conveyor belts and systems for cooling, flaking, solidifying, heating, curing and drying applications.

□ Louis Dodd has been named Pacific Northwest sales engineer for **Cryoquip** of Gardena, Calif. Dodd is a former captain of catcher/processors and fishing vessels in the Pacific Northwest. The Ewing Agency of Fountain Valley, Calif., will continue as Cryoquip's representative for Southern California and Baja.

□ The U.S. Department of Commerce invites the United States seafood industry to display and sell its products at the 10th Salon International de l'Alimentation (SIAL '82), the international food exposition held in Paris from November 15 through 20, 1982. The SIAL show has proven to be an excellent forum for beginning or increasing export sales of U.S. seafood products. In 1980, this event attracted 190,000 trade visitors from 120 countries who were looking for food services and products to sell in their established markets. The U.S. seafood firms that participated in SIAL '80 made hundreds of new business contacts, and a similar show held in Germany in October 1981 resulted in sales totaling \$10 million for the companies that were represented.

The U.S. Seafood Sales Exhibit at SIAL '82 will be the largest of its kind, occupying almost half of the U.S. pavilion. The participation fee of \$2,000 per booth includes space rental, booth design and construction, receptionist/interpreters, lounge area, kitchen facilities for sample preparation, bilingual promotional materials, and more.

Interested companies are urged to apply as soon as possible. The deadline for applications is June 1, 1982. For applications or more information, contact William Folsom, U.S. Department of Commerce, National Marine Fisheries Service/NOAA, 3300 Whitehaven Street, N.W., Washington, D.C. 20235. Telephone: (202) 634-7451.

□ Canadian Pacific Rail, in conjunction with Totem Ocean Trailer Express, Inc., has launched a new high-speed intermodal container service from Canada and the United States to Alaska.

The new combined service has shippers in eastern Canada and the United States moving their freight in CP Rail domestic containers to Vancouver, B.C. Upon arrival, they are transferred from flatcars to highway chassis and transported the same day by road to Totem's trailership terminal in Tacoma, Washington.

The containers-on-chassis roll aboard Totem's The Great Land and the Westward Venture (the two largest trailerships in the world) and are routed to Anchorage in approximately 66 hours. At the port of call, they are offloaded and ready to roll to their final destination anywhere in Alaska.

The introduction of this new intermodal container service enhances the speed and economy of mass rail movement, in combination with the flexibility of trucking for highway movement beyond the railhead and fast, efficient sea transport aboard roll-on/roll-off trailerships.

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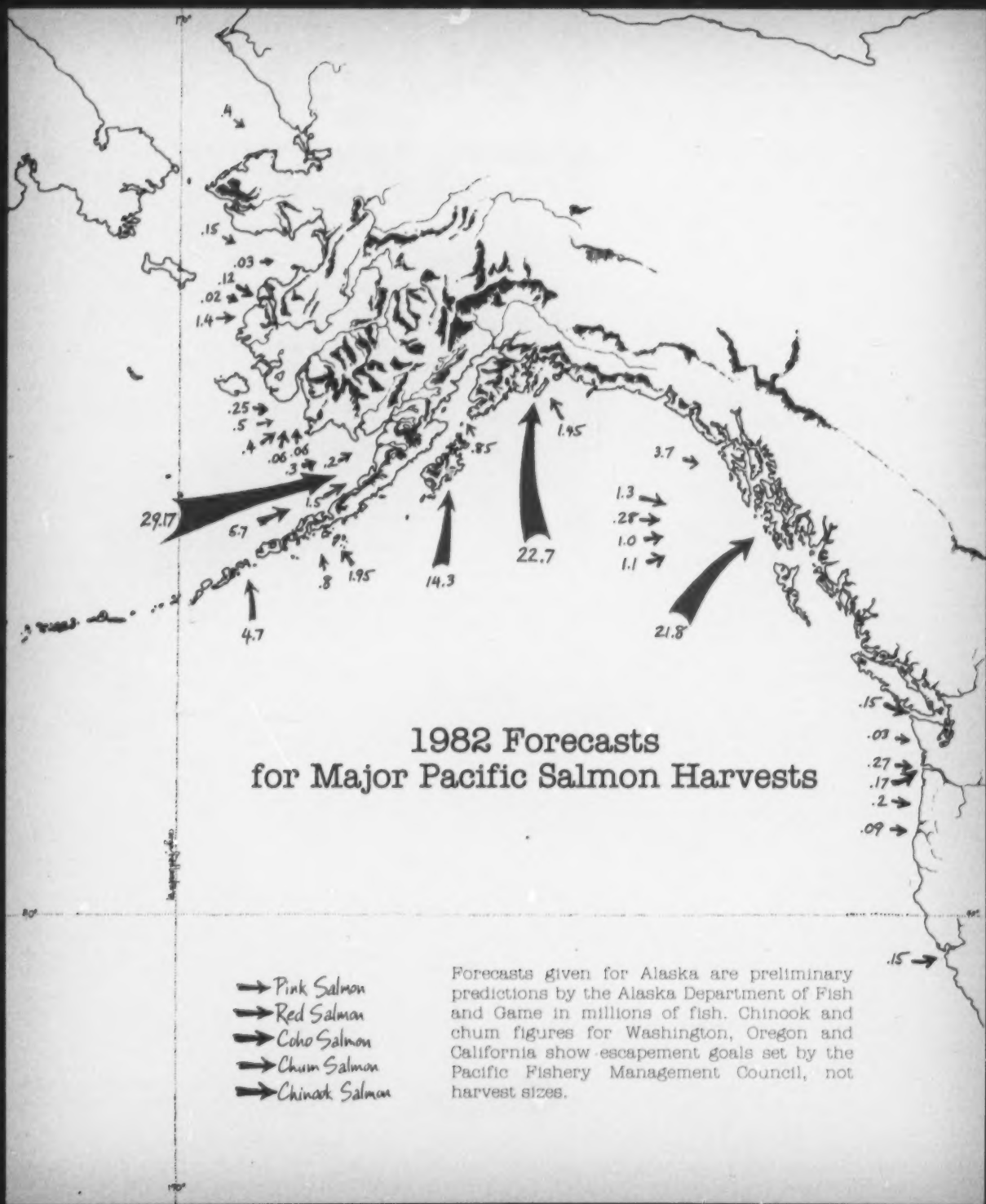
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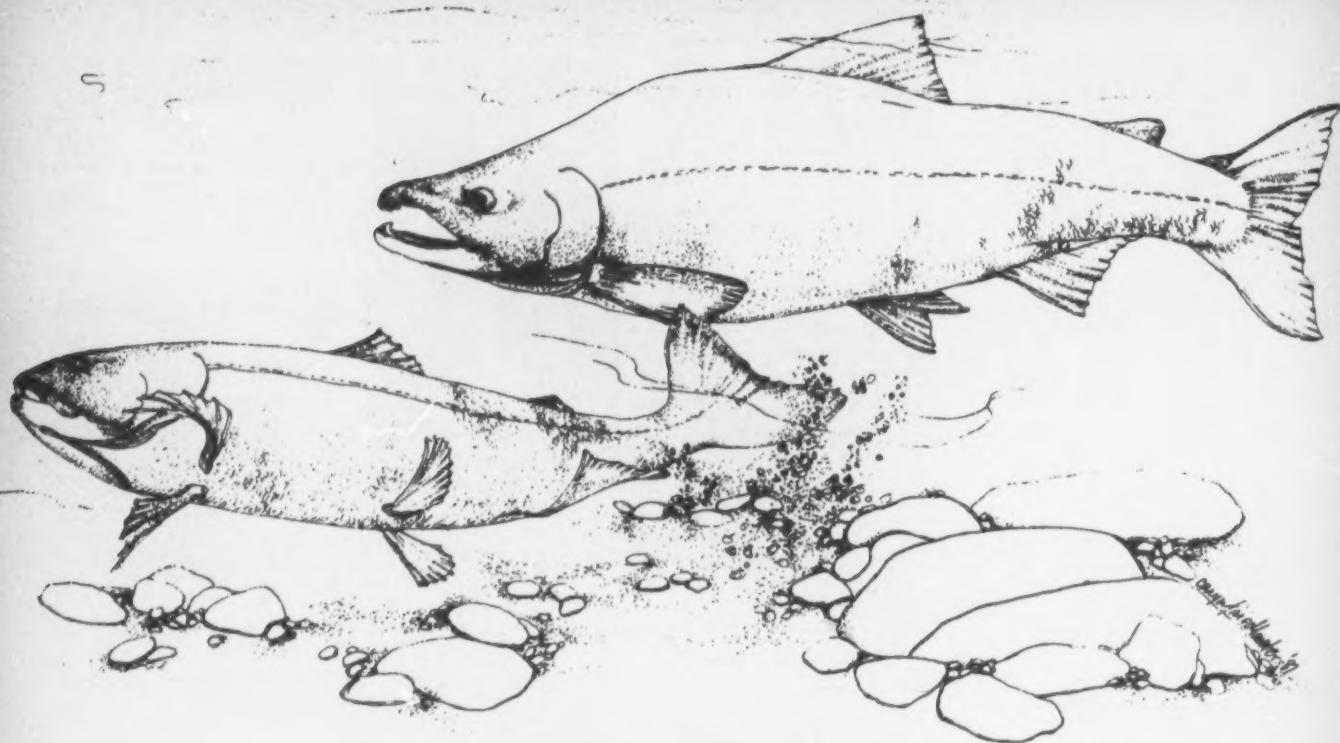
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SALMON: Moving the Big Pack is 1982's Challenge

• After two decades of selling small canned salmon packs, the salmon industry faces the challenge of moving a larger pack in a depressed market.

It is not the first time the industry has faced the prospect of moving a large pack. In the '30s and '40s, large canned packs were commonplace.

"I have seen the industry come out of what looked like absolute disaster," said Walt Yonker, vice president of Pacific Seafood Processors Association. "In the '30s we had years when we had to move 8 million cases.

"One problem we have now," he said, "is marketing programs geared to lower production. It is always tough to gear programs up to a higher production."

The 1981 canned salmon pack of 4,634,657 cases followed 1980's large pack of 4,201,756 cases.

The problem of moving two large packs in a row showed up in inventory carried by companies into 1982 — 3.4 million cases — which was 30 percent above the inventory of a year before. Sales in the last half of 1981 were down nearly 20 percent from the com-

parable period of 1980, according to the National Food Processors Association.

• In the face of high inventories, the industry must deal with a 1982 run predicted to be nearly equal to last year's, which produced a catch of 111.4 million fish, third largest in history. The Alaska Department of Fish and Game predicts a harvest of 100 million to 135 million fish, including 75 million pinks.

In good times, marketing is a challenge. In the current recession, *(continued on page 34)*

1981 Pacific Canned Salmon Packs and Values

(48-LB. CASE EQUIVALENTS)

	RED		PINK		CHUM		COHO		KING		TOTAL	
	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)
Alaska	1,270,159	167,930,167	2,500,202	201,545,765	617,255	42,952,595	36,558	3,664,605	7,751	790,915	4,431,925	416,884,047
Washington	26,954	5,272,380	152,103	12,707,670	11,912	661,085	11,540	1,275,781	223	39,632	202,732	19,956,548
Total United States	1,297,113	173,202,547	2,652,305	214,253,435	629,167	43,613,680	48,098	4,940,386	7,974	830,547	4,634,657	436,840,595
British Columbia*	648,401	119,954,085	1,105,915	134,479,264	89,462	8,946,200	62,957	8,310,324	7,910	1,581,915	1,914,645	273,271,788
Grand Total	1,945,514	293,156,632	3,758,220	348,732,699	718,629	52,559,880	111,055	13,250,710	15,884	2,412,462	6,549,302	710,112,383

*Values are given in Canadian dollars.

Note: Preliminary data.

Source: National Food Processors Association (figures are compiled from the portion of the pack examined by NFPA), Fisheries & Oceans (Canada), and Seafood Business Report.

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Pacific Canned Salmon Packs and Values by State

(48-LB. CASE EQUIVALENTS)

YEAR	ALASKA		WASHINGTON		OREGON		U.S. TOTAL*		BRITISH COLUMBIA		GRAND TOTAL		YEAR
	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)*	Cases	Value (\$)	
1940	5,028,378	31,828,451	222,808	2,825,000	297,716	4,129,220	5,548,902	38,782,681	1,467,227	427,923	7,016,129	50,209,908	1940
1941	6,906,503	57,466,702	491,311	6,162,000	399,840	5,925,444	7,798,799	69,567,646	2,248,870	18,406,545	10,047,649	87,974,191	1941
1942	5,089,109	48,677,509	366,065	6,909,000	397,331	6,890,162	5,852,515	62,476,671	1,811,560	20,050,238	7,664,075	82,526,909	1942
1943	5,396,509	58,579,194	149,175	2,309,000	130,707	2,857,246	5,677,158	63,761,440	1,258,221	11,673,469	6,935,379	75,434,909	1943
1944	4,877,796	51,608,544	81,490	1,774,000	159,783	3,445,244	5,119,943	56,843,448	1,097,558	11,479,093	6,652,646	68,322,541	1944
1945	4,338,692	44,528,964	414,258	4,845,000	155,292	3,287,812	4,913,335	52,699,776	1,739,311	18,409,962	6,217,521	71,109,738	1945
1946	3,971,109	58,667,561	385,437	13,020,000	206,563	7,165,645	5,568,149	79,006,206	1,348,138	17,532,462	5,916,287	96,538,668	1946
1947	4,302,466	91,297,885	957,429	21,420,000	338,852	11,133,690	5,612,644	124,364,575	1,505,157	24,900,000	7,117,379	149,264,575	1947
1948	4,010,612	100,694,614	484,102	12,685,858	314,556	10,956,513	4,820,687	124,703,080	1,308,137	26,579,000	6,128,824	151,282,080	1948
1949	4,391,051	81,262,468	973,740	17,481,782	158,472	4,665,290	5,524,376	103,430,780	1,436,464	27,654,489	6,960,840	131,085,269	1949
1950	3,272,643	81,403,511	670,341	18,285,000	176,063	6,193,000	4,119,047	105,881,511	1,482,560	30,155,177	5,602,056	183,885,502	1950
1951	3,534,315	77,201,463	906,252	21,357,974	175,091	6,631,198	4,615,658	105,190,635	1,955,475	46,261,080	6,571,133	151,451,715	1951
1952	3,574,191	76,357,016	749,591	17,122,352	140,565	4,784,421	4,455,022	99,636,808	1,293,435	27,751,435	5,741,490	127,388,243	1952
1953	2,934,667	60,987,334	838,422	18,680,750	127,808	4,063,675	3,911,333	83,747,184	1,821,269	35,060,600	5,732,602	118,807,784	1953
1954	3,207,154	66,139,617	973,941	25,727,689	92,291	3,130,700	4,275,548	95,063,437	1,742,736	39,293,176	6,018,284	134,356,613	1954
1955	2,457,969	58,839,784	764,719	17,569,902	138,250	4,996,355	3,286,785	81,436,652	1,406,100	31,644,673	4,692,885	113,081,325	1955
1956	2,950,354	76,948,880	334,505	11,097,115	147,105	5,401,329	3,432,658	93,472,448	1,118,279	32,231,241	4,550,937	125,703,989	1956
1957	2,442,710	62,564,386	624,842	18,296,970	118,161	4,948,224	3,187,887	85,887,711	1,424,264	35,872,414	4,612,151	207,647,836	1957
1958	2,974,993	65,531,283	625,909	20,659,030	134,754	6,053,733	3,736,661	92,290,276	1,908,056	56,740,772	5,644,717	149,031,048	1958
1959	1,770,795	49,493,910	585,487	18,118,907	101,712	4,239,463	2,457,994	71,852,280	1,077,097	35,280,411	3,535,091	107,132,691	1959
1960	2,571,265	73,055,345	201,398	8,695,057	61,799	2,966,921	2,834,462	84,717,323	631,150	22,768,000	3,465,612	107,485,323	1960
1961	3,211,962	99,352,358	401,121	14,580,389	83,643	4,077,528	3,696,726	118,010,275	1,403,994	45,778,726	5,100,720	163,789,001	1961
1962	3,475,196	93,710,090	246,658	8,759,840	79,260	3,561,098	3,801,114	106,031,028	1,816,585	52,751,840	5,617,699	158,732,868	1962
1963	2,650,199	67,109,620	569,579	17,382,900	69,799	3,145,849	3,289,577	87,636,369	1,203,271	34,613,527	4,492,848	122,251,896	1963
1964	3,549,379	87,530,030	130,329	4,755,873	79,603	3,480,322	3,759,311	95,766,225	1,255,308	43,676,000	5,014,619	139,442,225	1964
1965	3,310,064	106,041,505	248,882	9,915,359	113,489	4,975,716	3,672,435	120,932,580	913,957	35,060,000	4,586,392	155,992,580	1965
1966	3,976,957	119,048,988	274,363	11,409,197	92,727	4,119,485	4,344,047	134,577,670	1,819,215	64,061,552	6,163,262	198,639,222	1966
1967	1,464,006	52,081,517	485,051	18,631,135	123,213	5,408,690	2,072,270	76,121,342	1,465,708	57,141,000	3,537,978	133,262,342	1967
1968	3,168,127	103,411,623	140,368	6,100,705	48,644	2,205,942	3,357,139	111,718,270	1,746,457	65,481,973	5,103,596	177,300,243	1968
1969	2,252,022	84,676,144	203,422	9,452,463	64,306	3,096,920	2,519,750	97,225,527	624,153	30,110,000	3,143,903	127,335,527	1969
1970	3,564,508	124,577,532	189,383	10,323,798	58,268	3,330,040	3,812,159	138,231,370	1,423,882	58,908,000	5,236,041	138,290,278	1970
1971	2,899,011	107,981,152	463,132	23,275,554	151,017	6,719,640	3,513,160	137,976,346	1,404,005	65,803,000	4,917,165	203,779,346	1971
1972	1,705,326	75,293,999	190,334	11,925,259	34,993	1,933,916	1,930,653	89,153,174	1,172,752	55,134,000	3,103,405	144,287,174	1972
1973	1,209,757	86,416,654	304,934	28,499,916	32,213	3,192,098	1,546,904	118,108,668	1,550,114	127,065,000	3,097,018	245,173,668	1973
1974	1,343,254	98,860,487	578,009	45,250,006	56,331	4,603,068	1,977,594	148,713,561	1,428,882	114,312,000	3,406,476	263,025,561	1974
1975	1,383,900	95,423,802	162,204	14,293,000	9,126	697,000	1,555,230	110,413,802	517,370	43,252,000	2,072,600	153,665,802	1975
1976	2,469,530	178,284,574	135,518	13,946,000	5,850	627,000	2,610,898	192,857,574	1,025,830	91,733,000	3,636,728	284,590,574	1976
1977	2,594,659	188,834,352	230,905	20,646,000	1,554	228,000	2,827,118	209,708,352	1,346,967	122,987,000	4,174,085	332,695,352	1977
1978	2,921,565	211,357,826	11,292	913,000	2,394	380,000	2,935,251	212,650,826	1,126,876	115,913,000	4,062,127	328,563,826	1978
1979	3,048,800	253,068,900	144,041	15,765,476	170	25,075	3,193,011	268,859,451	955,225	115,927,000	4,148,236	384,786,451	1979
1980	4,175,440	400,060,000	26,053	3,751,000	263	30,000	4,201,756	403,841,000	1,114,426	146,828,000	5,316,182	550,669,000	1980
1981	4,431,925	416,884,047	202,732	19,956,548			4,634,657	436,840,595	1,914,645	273,271,788	6,549,302	710,112,383	1981

*Canadian funds.

*1941-1958 totals include small California pack.

Note: 1981 data preliminary.

Source: Department of Fisheries and Oceans of British Columbia, National Food Processors Association, Seafood Business Report.

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1981 Western Alaska

(48-LB. CASE EQUIVALENTS)

COMPANY	LOCATION	RED			PINK		
		1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total
Alaska Packers Assn., Inc.	S. Naknek	48,963	38,676	87,639			
Bering Sea Fisheries	Emmonak						
Bumble Bee Seafoods	S. Naknek	20,646	16,801	37,447			
Columbia Wards Fisheries	Ekuk	95,800	14,536	110,336			
	Naknek	73,011	24,333	97,344			
Egegik Seafoods	Egegik	32,270	37,952	70,222			
Icicle Seafoods, Inc.	Bristol Bay*	7,703	1,933	9,636			
Neibro Packing Co.	Naknek	22,086	139,292	161,378			
Peter Pan Seafoods, Inc.	Dillingham	62,592	36,607	99,199			
Red Salmon Co.	Naknek	20,646	16,801	37,447			
Togiak Fisheries, Inc.	Togiak	4,834	1,700	6,534			
Miscellaneous	Western Alaska					29	29
						699	699
TOTAL	Western Alaska	323,986	376,202	700,188		728	728

1981 Central Alaska

COMPANY	LOCATION	RED			PINK		
		1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total
Alaska Packers Assn., Inc.	Chignik	20,995	5,763	26,758	18,149	8,648	26,797
	Chignik*				314	126	440
	Cordova*	20	892	912	47,648	21,002	68,650
Chugach Alaska Fisheries	Cordova	896	25,842	26,738	94,884	65,262	160,146
Columbia Wards Fisheries	Alitak	5,448	4,406	9,854	64,876	13,574	78,450
	Chignik Lagoon	16,278	16,418	32,696	8,312	3,811	12,123
	Kenai	18	2,213	2,231	2,869	1,570	4,439
	Kodiak	420		420	17,466		17,466
	Port Bailey	938	2,571	3,509	45,449	16,253	61,702
Icicle Seafoods, Inc.	Seward	432	1,354	1,786	97,300	47,597	144,897
Keener Packing Co., Inc.	Soldotna		27	27			
Kodiak King Crab, Inc.	Kodiak	3,993	6,900	10,893	134,601	7,216	141,817
Morpac, Inc.	Cordova	21	14,807	14,828	34,629	16,342	50,971
Ocean Beauty Alaska, Inc.	Sand Point*	1,179		1,179	4,249		4,249
	Uganik Bay	488	9,597	10,085	4,046	60,807	64,853
Pan Alaska Fisheries, Inc.	Unalaska	7,955	11,217	19,172	20,148	17,495	37,643
Pederson Point	Kodiak/Seattle*	25,026	7,690	32,716			
Peter Pan Seafoods, Inc.	King Cove	70,062	81,949	152,011	132,552	6,049	138,601
	Kodiak	808		808	23,218		23,218
Sea-Nik Foods	Niilnichik		68	68		185	185
St. Elias Ocean Products, Inc.	Cordova	308	2,875	3,183	114,191	43,562	157,753
Swiftsure Fisheries	Anchorage/Kodiak/Seattle/						
	Larsen Bay	5,349	20,338	25,687	35,458	58,397	93,855
Miscellaneous	Central Alaska	53,096	48,881	101,977	230,645	191,497	422,142
TOTAL	Central Alaska	213,730	263,808	477,538	1,131,004	579,393	1,710,397

1981 Southeast Alaska

COMPANY	LOCATION	RED			PINK		
		1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total
Annette Island Packing Co.	Metlakatla	1,197	582	1,779	55,802	18,248	74,050
Columbia Wards Fisheries	Craig	659		659	66,569		66,569
Excursion Inlet Packing Co.	Excursion Inlet				60,196	22,765	82,961
Harbor Seafoods Co., Inc.	Wrangell	5	882	887	19,240	4,978	24,218
Icicle Seafoods, Inc.	Petersburg				89,223	66,750	155,973
Ocean Beauty Alaska, Inc.	Ketchikan	746	3,024	3,770	91,737	27,689	119,426
Peter Pan Seafoods, Inc.	Ketchikan	365	926	1,291	22,504	14,786	37,290
Petersburg Processors, Inc.	Petersburg	805	8,775	9,580	38,792	2,182	40,974
Wards Cove Packing Co., Inc.	Ketchikan		148	148	59,711	14,195	73,906
Miscellaneous	Southeast Alaska	68,223	6,096	74,319	110,448	3,262	113,710
TOTAL	Southeast Alaska	72,000	20,433	92,433	614,222	174,855	789,077

Note: Miscellaneous pack represents unreported production by the following companies — Western: Diamond E Fisheries, Queen Fisheries, Inc., The Village Cannery, Whitney Fidalgo Seafoods; Central: Alaska Pacific Seafoods, Chignik Canning Co., Kenai Packers, North Pacific Processors, Whitney Fidalgo Seafoods; Southeast: Whitney Fidalgo Seafoods.

*Custom Processed

Canned Salmon Pack

CHUM			COHO			KING			TOTAL	COMPANY
1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total		
2,936		2,936				76		76	90,651	Alaska Packers Assn.
1,583		1,583	378		378	114		114	2,075	Bering Sea Fisheries
525	850	1,375				47	49	96	38,918	Bumble Bee Seafoods
13,300	573	13,873	10	475	485	562		562	125,256	Columbia Wards Fisheries
2,149	1,232	3,381				127	71	198	100,923	
1,421	1,456	2,879				12	32	44	73,145	Egegik Seafoods
318	27	345							9,981	Icicle Seafoods
843	3,557	4,400				222	791	1,013	166,791	Nelbro Packing Co.
9,306	2,701	12,007				66	54	120	111,326	Peter Pan Seafoods, Inc.
525	850	1,375				47	49	96	38,918	Red Salmon Co.
6,378	5,459	11,837				199	841	1,040	19,440	Togiak Fisheries, Inc.
7,408	12,913	20,321	163	306	469	975	2,179	3,154	7,649	Miscellaneous
46,692	29,620	76,312	551	781	1,332	2,447	4,066	6,513	785,073	TOTAL

Canned Salmon Pack

CHUM			COHO			KING			TOTAL	COMPANY
1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total		
22,619	174	22,793	2,786		2,786	176		176	79,310	Alaska Packers Assn., Inc.
4,125	616	4,741	6	9	15		2	2	5,198	
11,170	2,460	13,630	146	131	277				83,469	
26,637	7,505	34,142	90	761	851		53	53	221,930	Chugach Alaska Fisheries
13,199	526	13,725	292	160	452				102,481	Columbia Wards Fisheries
13,584	338	13,922	817	170	987	34	21	55	59,783	
619	977	1,596	93	350	443				8,709	
4,374		4,374	427		427				22,687	
10,233	1,881	12,114	175	919	1,094				78,419	
11,770	2,097	13,867	740	909	1,649	23		23	162,222	Icicle Seafoods, Inc.
			14		14	82		82	123	Keener Packing Co.
36,660	10,548	46,208	3,105	120	3,225				202,143	Kodiak King Crab, Inc.
12,065	3,392	15,457	280	268	548				81,804	Morpac, Inc.
4,609		4,609	153		153				10,190	Ocean Beauty Alaska, Inc.
	21,162	21,162					30	30	96,130	
9,875	5,995	15,870	93		93				72,778	Pan Alaska Fisheries, Inc.
1,260	228	1,488					68	68	34,272	Pederson Point
98,406	41,508	139,914	2,103	5,179	7,282				437,808	Peter Pan Seafoods, Inc.
9,178		9,178	145		145				33,349	
	25	25		23	23		23	23	324	Sea-Nik Foods
17,013	10,375	27,388		427	427		10	10	188,761	St. Elias Ocean Products, Inc.
4,239	5,430	9,669	33	948	981		37	37	180,229	Swiftsure Fisheries
53,504	33,263	86,767	1,517	2,511	4,028	164	82	246	615,160	Miscellaneous
364,139	148,500	512,639	13,015	12,885	25,900	479	326	805	2,727,279	TOTAL

Canned Salmon Pack

CHUM			COHO			KING			TOTAL	COMPANY
1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total	1 & 4 lb cans	½ & ¼ lb cans	Total		
2,278	817	3,095	914	394	1,308				80,232	Annette Island Packing Co.
1,316		1,316	473		473				69,017	Columbia Wards Fisheries
5,919		5,919							88,880	Excursion Inlet Packing Co.
10	1,432	1,442	8	254	262				26,809	Harbor Seafoods Co., Inc.
			25	33	58	78		78	156,109	Icicle Seafoods, Inc.
3,353	641	3,997	2,086	790	2,876	3	2	5	130,074	Ocean Beauty Alaska, Inc.
1,471		1,471	644		644	29		29	40,725	Peter Pan Seafoods, Inc.
2,815		2,815	643	390	1,033				54,402	Petersburg Processors, Inc.
1,452	99	1,551	62	485	547				76,152	Wards Cove Packing Co., Inc.
6,347	351	6,698	2,157		2,157	116	205	321	197,205	Miscellaneous
24,961	3,343	28,304	7,012	2,346	9,358	226	207	433	919,605	TOTAL





1981 Fresh and Frozen Salmon and Salmon Roe

(POUNDS)

COMPANY AND LOCATION	TROLL CAUGHT SALMON	NET SALMON	SALMON ROE
ALASKA			
Alaska Far East Corp., Naknek		1,250,000	36,773
Alaska Food Co., Inc., Kodiak		1,351,897	
Alaska Packers Assn., Inc., Chignik		2,510,957	342,637
Cordova**		377,605	269,873
Kodiak		152,535	5,046
S. Naknek			210,105
American Eagle Seafoods, Inc., M/V Aleutian Dragon		544,969	
Annette Island Packing Co., Metlakatla	173,467	1,884,692	245,608
B&R Enterprises, M/V Aleutian Dragon		522,765	
Bering Sea Fisheries, Emmonak		1,864,735	22,478
Bumble Bee Seafoods, S. Naknek		1,588,330	
Chugach Alaska Fisheries, Inc., Cordova		377,559	403,491
Columbia Wards Fisheries, Alitak		1,086,110	
Ekuak		3,454,440	
Kenai		2,198,020	
Port Bailey		179,800	
Crusader Fisheries, Inc., M/V Crusader		1,443,692	
Dutch Harbor Seafoods, Ltd., P/V Galaxy & P/V Viceroy		364,128	
Egegik Seafoods, Egegik			141,544
Excursion Inlet Packing Co., Excursion Inlet	592,000	2,014,180	
Halibut Producers Cooperative, Sitka	2,179,963	892,062	48,920
Harbor Seafoods Co., Inc., Wrangell	56,931	439,841	42,052
Icicle Seafoods, Inc., Homer		4,570,960*	44,500
Petersburg	1,134,796	5,177,325*	902,892
Seward		3,575,741	707,340
P/V Arctic Star		4,741,453	
P/V Bering Star		6,242,267	
Jonah, Inc., Port Moller/False Pass		807,770	
Juneau Cold Storage, Inc., Juneau	854,723	1,600,000	15,672
Kachemak Seafoods, Inc., Togiak		1,095,377	54,032
Keener Packing Co., Inc., Soldotna		228,571	39,464
Kodiak King Crab, Inc., Kodiak		2,614,327	533,650
Morpac, Inc., Cordova		1,327,668	548,030
Nelbro Packing Co., Naknek		1,665,272*	216,353
Northern Products Corp., Various	1,145,023	271,939	18,770
Northern Seafoods Inc., Anchorage, Bethel, Homer			420,000
Ocean Beauty Alaska, Inc./ Ketchikan Cold Storage, Ketchikan	664,180	580,786	318,252
Ocean Beauty Alaska, Inc., Sand Point			32,990
Uganik Bay			349,822
Pan Alaska Fisheries, Unalaska, M/V Royal Sea, M/V Royal Venture		9,472,000	230,000
Pederson Point, Pederson Point		6,271,100*	68,200
Peter Pan Seafoods, Inc., Dillingham		1,008,841	360,433
Ketchikan			126,166
King Cove		1,874,993	1,354,804
Kodiak			96,860
Port Moller		6,156,190	225,731
Petersburg Processors, Inc., Petersburg			87,608
E.C. Phillips & Son, Inc., Ketchikan	116,050	1,739,088*	2,101
Red Salmon Co., Naknek		1,588,330	
Sea-Alaska Products, Inc., M/V Robert E. Resoff		1,999,232	8,002
Sea-Nik Foods, Ninilchik		50,000	2,200
Sitka Sound Seafoods, Inc., Sitka	1,771,701*	540,000	40,000
St. Elias Ocean Products, Inc., Cordova		2,667,372*	614,240
Swiftsure Fisheries Inc., Anchorage/Kodiak	100,000*	7,200,000*	753,237
Togiak Fisheries, Inc., Togiak		2,995,532	
Trident Seafoods Corp., M/V Billikin, Bountiful, Mr. J. Tempest		5,121,790	

(continued next column)

COMPANY AND LOCATION	TROLL CAUGHT SALMON	NET SALMON	SALMON ROE
Ultra Alaska Associates, Inc., Ultra Processor I		4,123,101	180,287
Ursin Seafoods, Inc., Kodiak		242,923	
Western Alaska Fisheries, Kodiak		4,000,000	200,000
Yakutat Seafoods, Yakutat		2,235,232*	
TOTAL ALASKA	8,788,834	118,283,479	10,320,163
BRITISH COLUMBIA			
Central Native Fishermen's Cooperative, Bella Bella & Ucluelet	1,000,000	6,200,000	150,000
Prince Rupert Fishermen's Co-op Assn., Prince Rupert		10,654,125	26,065
Quality Fish Co., Ltd., Vancouver	45,000	5,217,000	
TOTAL BRITISH COLUMBIA	1,045,000	22,071,125	176,065
WASHINGTON			
Aquasea Farms, Inc., Lopez	145,200 ¹		
Bumble Bee Seafoods, Bellingham		64,877*	61,381
Chinook Packing Co., Chinook	210,000*	40,000*	
Guilford Packing Co., Inc., Port Townsend		314,115	10,540
Jessie's Ilwaco Fish Co., Inc., Ilwaco	400,000	750,000	50,000
Mutual Fish Co., Inc., Seattle	7,000*	20,000*	6,000
Pacific Salmon Co., Inc., Seattle		3,600,000*	
Peter Pan Seafoods, Inc., Bellingham		193,295	65,696
Seafarms Pacific, Port Angeles	750,000	2,500,000	75,000
Sea Run Seafoods Ltd., Seattle	244,200*	2,216,200*	100,000
Seattle Seafoods, Seattle	412,801		
Seawest Industries, Inc., Bellingham		1,500,000	
Stewart Seafoods, Inc., Everett		1,699,340	64,007
Swinomish Fish Co., LaConner		340,000*	
Washington Fish & Oyster Co., Seattle		2,336,561	
TOTAL WASHINGTON	2,169,201	15,574,388	432,624
OREGON			
Alaska Packers Assn., Inc., Hammond	680,114*		612
Bumble Bee Seafoods, Astoria/ Newport	6,214*	100,494*	
Bell Buoy Crab Co., Seaside	13,700*	22,000*	800
Oregon Aqua Foods	400,000**		20,000
TOTAL OREGON	1,100,028	122,494	21,412
CALIFORNIA			
Grader Fish Co., Fort Bragg		168,384*	
Meredith Fish Co., Sacramento	1,000,000		
Reigal Fisheries, Moss Landing	102,456		
TOTAL CALIFORNIA	1,102,456	168,384	

**Custom processed.

¹Farmed or ranched.

*Includes salmon processed for the fresh market as follows:

Icicle Seafoods, Homer	133,500
Petersburg	4,000
P/V Bering Star	10,900
Nelbro Packing Co.	311,388
Pederson Point	103,700
E.C. Phillips & Son	233,276
Sitka Sound Seafoods	100,701
St. Elias Ocean Products	20,000
Swiftsure Fisheries (troll)	100,000
(net)	3,200,000
Yakutat Seafoods	165,482
Bumble Bee Seafoods, Bellingham	986
Chinook Packing Co.	1,000
Mutual Fish Co. (troll)	5,000
(net)	10,000
Pacific Salmon Co.	400,000
Sea Run Seafoods (troll)	166,700
(net)	662,200
(also packed 238,400 fillets)	
Swinomish Fish Co.	200,000
Alaska Packers, Hammond	29,099
Bumble Bee, Astoria/Newport (troll)	1,860
(net)	18,166
Bell Buoy Crab Co. (troll)	13,700
(net)	4,000
Grader Fish Co.	total
Oregon Aqua Foods	240,000

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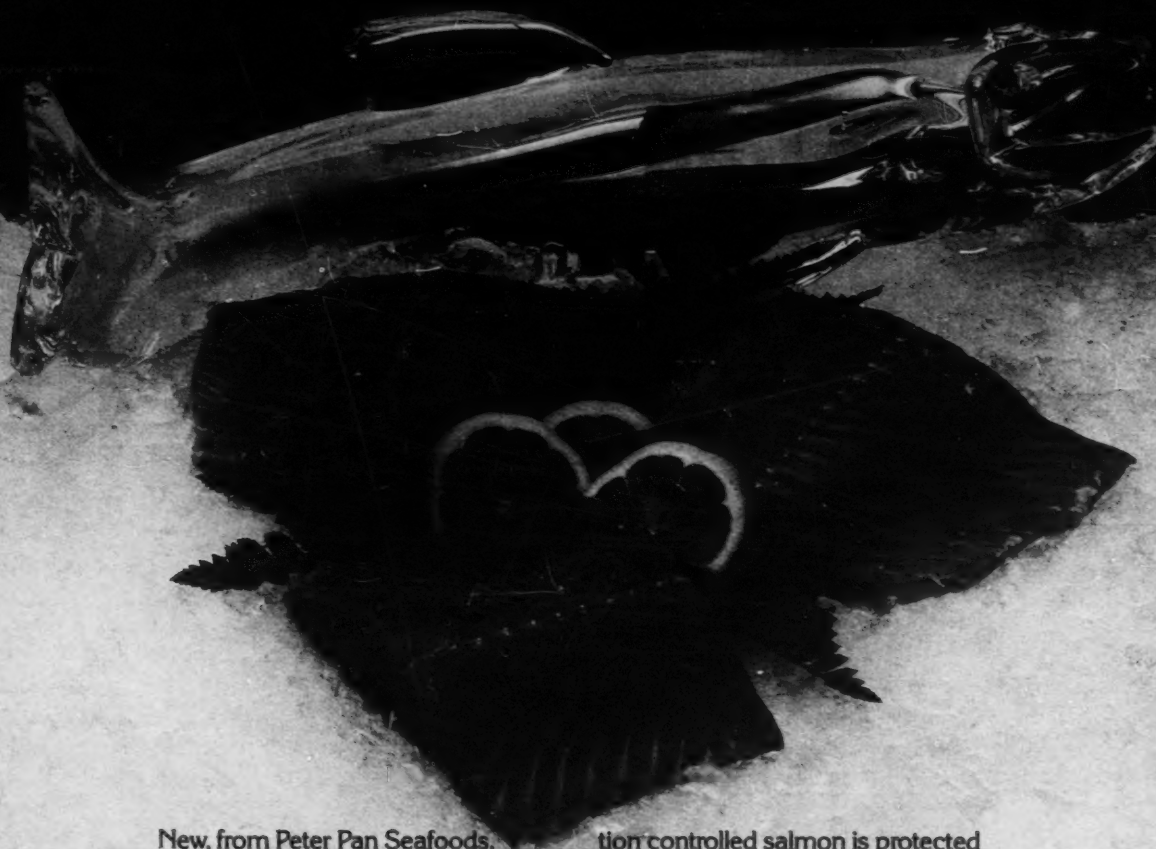
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1981 Alaska Salmon Landings

(THOUSANDS OF FISH)

MANAGEMENT AREA	KING	RED	COHO	PINK	CHUM	TOTAL
SOUTHEASTERN REGION						
Southern Southeast						
Gillnet:						
District 1	1.6	133.2	23.8	667.1	64.5	890.2
Prince of Wales Island	2.1	180.7	23.1	429.6	34.1	669.6
Stikine River	.3	8.8	1.4	1.5	3.6	15.6
Southern districts seine	7.5	339.2	223.2	11,175.3	269.9	12,015.1
Annette Island trap	1.0	15.9	4.4	230.8	3.9	256.0
Southern Southeast total	12.5	677.8	275.9	12,504.3	376.0	13,846.5
Northern Southeast						
Gillnet:						
Taku-Snettisham	1.6	39.7	26.3	222.7	74.5	364.8
Lynn Canal	1.3	93.0	42.4	137.5	90.0	364.2
Yakutat	2.1	149.4	129.1	134.4	10.6	425.6
Northern districts seine	2.2	55.7	42.8	3,976.5	201.9	4,279.1
Northern Southeast Total	7.2	337.8	240.6	4,471.1	377.0	5,433.7
Southeastern Region troll	247.0	7.6	860.9	576.0	9.0	1,700.5
SOUTHEASTERN REGION TOTAL	266.7	1,023.2	1,377.4	17,551.4	762.0	20,980.7
CENTRAL REGION						
Cordova area						
Copper River	20.8	487.0	303.8	23.8	1.8	837.2
Bering River	2	56.0	76.2	10.2	8.5	151.1
Prince William Sound	4	252.4	2.4	20,149.9	1,874.6	22,279.7
Cordova area total	21.4	795.4	382.4	20,183.9	1,884.9	23,268.0
Cook Inlet area						
Upper Cook Inlet						
Northern Dist.	8	249.5	133.1	53.3	46.1	482.8
Central Dist.	10.8	1,193.8	361.0	74.6	796.8	2,437.0
Upper Cook Inlet total	11.6	1,443.3	494.1	127.9	842.9	2,919.8
Lower Cook Inlet						
Southern Dist.	3	78.8	8.2	1,473.8	24.1	1,585.2
Kamishak Dist.	0	4.5	1.8	53.4	60.1	119.8
Outer Dist.	1	17.8	.1	1,723.7	226.2	1,967.9
Eastern Dist.		9.3	5	49.9	3.2	62.9
Lower Cook Inlet total	4	110.4	10.6	3,300.8	313.6	3,735.8
Cook Inlet area total	12.0	1,553.7	504.7	3,428.7	1,156.5	6,655.6
Kodiak Island	1.4	1,287.0	116.7	10,301.4	1,342.1	13,048.6
Chignik	2.7	1,836.6	77.1	1,130.0	575.4	3,621.8
South Peninsula	9.5	2,218.2	161.9	5,012.4	1,774.8	9,176.8
CENTRAL REGION TOTAL	47.0	7,690.9	1,242.8	40,056.4	6,733.7	55,770.8
WESTERN REGION						
Bristol Bay						
Naknek-Kvichak	10.0	10,949.0	1.0		348.9	11,308.0
Nushagak	195.0	7,713.0	225.0		773.0	8,906.0
Egegik	6.0	4,481.0	29.0		87.0	4,603.0
Ugashik	4.0	1,950.0	18.0		34.0	2,006.0
Togiak	24.0	621.0	30.0	7.0	236.0	918.0
Bristol Bay total	239.0	25,714.0	303.0	7.0	1,478.0	27,741.0
North Peninsula	17.9	1,827.2	156.7	10.5	708.2	2,720.5
Aleutian Islands		5.4	2	302.8	6.6	315.0
Arctic-Yukon-Kuskokwim						
Kuskokwim area	79.4	105.9	279.6	5	485.6	951.0
Yukon River						
Lower Yukon River	149.8		21.6		1,244.6	1,416.0
Upper Yukon River	9.1		2.8		393.0	404.9
Yukon River total	158.9		24.4		1,637.6	1,820.9
Norton Sound	7.9	.1	31.6	232.5	169.7	441.8
Kotzebue area	.1			2	677.3	677.6
Arctic-Yukon-Kuskokwim total	246.3	106.0	335.6	233.2	2,970.2	3,891.3
WESTERN REGION TOTAL	503.2	27,652.5	795.5	553.5	5,163.0	34,667.8
ALASKA TOTAL	816.9	36,366.7	3,415.7	58,161.3	12,658.7	111,419.3

Note: Preliminary data.
Source: ADF&G



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(48-LB CASE EQUIVALENTS)

YEAR	SOUTHEAST ALASKA							CENTRAL ALASKA						
	PI	Red	Pink	Chum	Coho	Kling	Total Cases	PI	Red	Pink	Chum	Coho	Kling	Total Cases
1940	46	125,462	1,452,037	484,476	155,577	1,539	2,219,091	42	384,266	1,441,266	343,072	126,878	18,359	2,314,475
1941	47	137,861	3,631,491	321,118	193,751	1,812	4,286,033	44	413,658	1,005,029	333,618	159,023	30,825	1,942,153
1942	47	121,083	1,758,741	597,373	189,210	2,033	2,668,779	44	352,475	1,051,359	328,860	180,698	34,916	1,948,308
1943	34	85,313	1,042,610	672,359	92,245	1,868	1,894,395	34	582,287	1,277,915	167,909	66,311	37,421	2,131,743
1944	38	131,580	1,081,344	655,188	88,380	1,765	1,958,247	45	461,718	1,198,665	286,498	96,255	29,718	1,876,245
1945	41	129,414	1,039,521	265,845	107,425	2,582	1,544,887	43	434,872	1,002,056	331,654	85,506	30,041	2,080,738
1946	41	59,029	999,443	321,037	94,074	1,612	1,475,195	48	350,728	1,053,605	257,909	96,301	25,356	1,783,899
1947	40	56,032	680,693	260,686	72,434	4,019	1,073,844	47	470,056	1,034,475	196,731	74,388	34,790	1,810,430
1948	39	39,317	683,972	403,959	165,033	5,973	1,298,254	57	318,638	616,822	291,977	69,259	34,774	1,331,470
1949	36	39,475	2,102,604	243,080	125,059	1,046	2,511,274	55	391,244	580,438	221,089	59,409	37,213	1,289,393
1950	36	49,475	535,662	500,422	116,344	560	1,202,463	55	513,985	558,263	242,301	68,233	40,386	1,423,158
1951	42	70,317	1,226,582	466,334	262,393	636	2,028,262	59	362,554	333,091	227,632	72,762	71,648	1,067,687
1952	40	74,510	593,422	527,960	122,277	2,756	1,320,925	48	377,094	577,406	399,864	67,117	34,935	1,456,417
1953	35	120,971	355,580	418,260	90,489	1,571	986,871	40	330,933	604,291	333,390	36,730	33,160	1,338,494
1954	27	113,130	519,364	601,800	87,996	2,642	1,324,932	39	299,325	621,214	381,536	77,041	28,257	1,407,373
1955	26	55,561	547,765	177,690	64,814	1,157	846,987	44	233,290	722,448	162,999	47,294	22,078	1,188,109
1956	23	80,855	565,076	267,934	44,030	2,082	959,977	44	357,242	547,775	375,417	47,525	22,082	1,350,041
1957	23	82,511	404,221	362,715	53,373	1,358	904,178	36	179,986	331,873	432,797	28,282	17,722	988,660
1958	21	81,867	702,899	356,611	51,300	843	1,193,520	39	130,889	818,063	357,059	39,859	9,174	1,355,044
1959	17	61,702	472,684	162,948	60,013	1,374	758,721	27	161,251	162,229	203,000	35,195	11,736	573,410
1960	32	44,684	139,998	112,924	19,167	1,019	317,792	41	284,951	529,675	365,842	53,460	13,188	1,247,116
1961	25	66,132	831,576	278,572	47,309	463	1,224,052	35	302,972	425,723	193,168	32,577	17,797	972,237
1962	29	62,586	600,576	220,907	49,694	1,142	934,905	34	326,498	1,238,360	382,126	51,374	14,154	2,012,577
1963	30	52,018	959,147	149,175	55,192	401	1,215,933	39	208,978	609,235	231,016	69,304	11,803	1,130,336
1964	34	70,735	900,425	217,148	73,880	494	1,262,682	31	271,997	959,927	400,420	85,956	5,270	1,723,570
1965	25	74,900	486,000	130,130	73,300	600	764,900	31	405,900	394,300	139,600	28,400	6,800	975,000
1966	22	76,279	1,108,692	313,155	63,016	796	1,561,938	25	423,073	812,208	240,592	50,650	5,218	1,531,741
1967	20	64,684	164,962	175,814	25,488	207	431,155	25	283,504	164,154	119,099	37,878	3,997	608,632
1968	21	56,652	971,816	296,824	45,756	866	1,371,914	27	360,470	701,701	303,688	67,855	3,341	1,437,055
1969	21	35,497	231,105	32,705	8,824	302	308,433	29	311,605	992,286	124,146	13,723	6,106	1,446,866
1970	21	28,481	487,208	142,472	17,396	196	675,753	27	559,618	824,537	242,123	34,178	1,014	1,661,470
1971	19	41,731	448,452	159,891	36,581	443	687,098	23	371,968	626,095	379,948	45,050	1,746	1,424,807
1972	21	58,978	447,085	206,265	33,632	2,152	748,112	23	286,053	150,702	224,453	14,103	765	676,076
1973	16	39,450	313,420	82,358	13,252	864	449,344	24	243,265	157,279	219,703	16,132	1,022	637,401
1974	16	56,023	265,497	136,247	23,260	644	481,671	16	289,740	209,752	138,721	28,219	2,739	669,171
1975	11	7,167	186,124	80,947	3,728	274	278,240	15	173,082	365,631	99,750	45,052	584	684,099
1976	14	14,500	279,439	24,346	4,776	153	331,070	23	449,625	815,553	215,980	25,492	2,039	1,508,689
1977	12	27,398	652,577	14,640	4,668	72	699,355	18	429,607	688,857	292,338	14,579	969	1,426,350
1978	13	10,559	599,781	11,980	7,841	833	630,994	22	298,502	929,119	201,290	15,767	1,556	1,446,234
1979	13	14,100	356,600	3,800	4,100	500	379,100	22	309,400	1,440,900	100,900	27,900	700	1,879,800
1980	10	49,936	499,526	35,013	11,225	240	595,940	21	949,307	1,564,602	313,553	34,524	5,674	2,867,660
1981	8	92,433	789,077	28,304	9,326	433	919,573	21	477,538	1,710,397	512,639	25,900	805	2,727,279

Note: 1980 and 1981 data preliminary.

Source: National Food Processors Association (figures are compiled from the portion of the pack examined by NFPA).

SALMON (cont. from p. 25)

moving the pack becomes even more challenging as consumers turn to less expensive forms of protein. In normal times, the usual consumer choice is between canned tuna and salmon. In a recession, the consumer may turn from more expensive protein sources to 59-cent-a-pound chicken.

- A botulism scare early in the year temporarily exacerbated problems in the marketplace. After a man from Belgium died of botulism poisoning from American canned salmon, Great Britain, the Netherlands and Belgium placed an embargo on all U.S. canned salmon products. The last European embargo on canned salmon, three years ago, lasted about three weeks.

The botulism problem spread to the domestic market, where the FDA ordered a recall of 7½-ounce cans packed jointly by the Whitney Fidalgo Co. and Ocean Beauty Seafoods at a Ketchikan cannery. FDA found no evidence of botulism toxin in any canned salmon product in the U.S.

market.

Consumer awareness of the botulism scare was inversely proportional to the distance of the market from Seattle. While the botulism scare commanded front-page attention in the Seattle daily newspapers, in Washington, D.C., it was reported in a small *Washington Post* story on page nine.

Consumer awareness of the scare was being measured by the Alaska Seafood Marketing Institute as this issue went to press. In addition, plans were made to reassure the retail buyer of the safety and high quality of the product and of industry efforts to market the product.

- The Japanese market for U.S. canned and frozen salmon has problems similar to the domestic market. Inventories carried into 1982 are up about 30 percent from the year before.

Japan relies upon its domestic fisheries, its salmon-ranching operations, and imports to fill its requirements of 200,000 to 250,000 metric tons of salmon each year. Supply from

the Japanese chum salmon fishery off Hokkaido last fall totaled nearly 21 million fish, a record high. Consistent success of Japanese salmon-ranching operations may eventually provide up to 50 percent of the total supply for the island nation, according to *Nikkan-Shokuryo Shimbun*, published for the Japanese seafood fishing industry.

- In Europe and the U.S. domestic market, Norwegian farm-reared salmon is putting serious pressure on American fresh and frozen salmon.

In the United States, Norwegians are flying in 20,000 pounds per week of fresh Atlantic salmon and selling it wholesale, reportedly for less than the \$4.60-per-pound price of Alaska troll-caught winter kings.

In Europe, the Norwegians enjoy transportation and delivery advantages. European buyers typically buy in large lots of 20,000 pounds or more from American producers. Smaller quantities may be purchased more frequently from Norwegian salmon farm-

Districts and Species

(48-LB CASE EQUIVALENTS)

WESTERN ALASKA							TOTAL	
PL	Red	Pink	Chum	Coho	King	Total Cases	CASES	YEAR
11	443,653	14,088	32,991	1,675	2,405	494,812	99	5,028,378 1940
19	613,369	129	55,771	3,439	5,609	678,317	105	6,906,503 1941
7	438,111	8,550	16,556	2,629	6,178	472,024	98	5,089,109 1942
14	1,314,575	1,532	42,410	178	11,676	1,370,371	81	5,396,509 1943
13	987,459	3,932	44,039	2,418	5,456	1,043,304	94	4,877,796 1944
8	39,132	1,623	92,551	3,103	9,086	715,495	92	4,338,892 1945
20	656,141	4,073	38,209	2,686	10,906	712,015	108	3,971,109 1946
21	1,350,151	8,449	42,914	1,893	14,885	1,418,192	107	4,302,466 1947
24	1,277,508	3,250	78,725	7,507	13,989	1,308,888	120	4,010,612 1948
21	529,859	—	44,140	4,411	11,974	590,384	112	4,391,051 1949
21	509,048	1,609	35,056	6,924	13,375	647,012	112	3,272,643 1950
13	339,592	75	25,521	8,003	15,328	388,519	114	3,534,315 1951
21	729,560	1,339	38,836	7,692	19,359	796,786	109	3,574,191 1952
19	530,186	1,108	45,398	2,703	20,810	600,205	94	2,934,667 1953
12	393,201	9,835	42,890	6,228	22,695	474,849	78	3,207,154 1954
12	372,756	90	22,968	2,476	24,583	422,873	79	2,457,969 1955
11	577,461	3,198	31,683	4,385	22,889	639,616	78	2,950,354 1956
13	484,499	2	31,142	5,078	29,150	549,871	72	2,442,710 1957
17	269,159	60,817	42,563	12,966	40,924	426,429	71	2,974,993 1958
9	361,550	32	49,378	3,091	32,157	446,208	53	1,770,795 1959
35	854,807	12,055	103,569	3,073	32,853	1,006,357	108	2,571,265 1960
31	926,441	—	51,828	1,980	35,424	1,015,673	91	3,211,962 1961
32	361,226	39,553	88,687	5,252	32,996	527,714	95	3,475,196 1962
24	218,445	1,909	52,504	5,790	25,282	303,930	93	2,650,199 1963
22	372,928	67,879	85,301	5,024	31,995	563,127	87	3,549,379 1964
26	1,464,300	—	31,500	400	42,300	1,538,500	82	3,310,064 1965
22	737,948	95,071	31,658	3,251	28,818	896,746	69	3,990,425 1966
19	334,177	8	45,983	3,143	40,908	424,219	64	1,464,006 1967
18	209,694	73,004	32,972	4,318	39,170	359,158	66	3,168,127 1968
19	440,276	33	26,037	1,793	28,584	496,723	69	2,252,022 1969
19	1,117,372	16,787	65,351	1,804	25,971	1,227,285	67	3,564,508 1970
14	694,507	—	61,914	939	29,746	787,106	56	2,899,011 1971
17	197,495	5,002	60,005	1,552	17,084	281,138	67	1,705,326 1972
13	61,429	—	51,946	2,464	7,173	123,012	56	1,209,757 1973
7	87,723	39,550	44,587	7,615	12,937	192,412	39	1,343,254 1974
11	373,038	800	40,305	286	7,132	421,561	37	1,383,900 1975
18	431,376	42,242	127,134	2,600	34,275	637,627	55	2,477,386 1976
12	304,653	853	153,215	2,676	7,557	468,954	42	2,594,859 1977
15	579,001	162,775	86,969	2,974	12,618	844,337	50	2,921,565 1978
15	721,300	14,200	35,000	10,400	9,000	789,900	50	3,048,800 1979
14	571,318	47,849	79,398	3,691	9,584	711,840	45	4,175,440 1980
13	700,188	728	76,312	1,332	6,513	785,073	42	4,431,925 1981

ers, keeping the buyer's inventory to a minimum.

Norwegian salmon production is expected to grow from 5,000 metric tons (1980) to 15,000 metric tons by 1985 and more than double its share of the market in Europe, according to the National Marine Fisheries Service.

- The U.S. salmon industry moved 200.6 million pounds of frozen salmon to export markets in 1981, up sharply from the 122.1 million pounds in 1980. At the same time, canned product that was moved to export markets dropped last year from 74.0 million pounds to 63.5 million pounds.

- The frozen pack resumed its growth in importance after two years of no growth. In 1981 a record high percentage of the entire pack went to the freezer — 44.9 percent, according to *Seafood Business Report* estimates.

- Frozen inventories of troll-caught Alaska chinook salmon are reported to be nearly exhausted. Early season demand should be strong. Ex-vessel prices are expected to open in the \$2.45-per-pound range for large red kings, and the season average is expected to be about \$3.00 per pound, compared with last season's price of \$2.55 per pound for large fish.

- A moderate decline in landings of Alaska troll-caught chinook salmon is expected, but coho salmon, a close substitute for chinook in certain product forms, are expected to return in numbers equal to or above historical averages.

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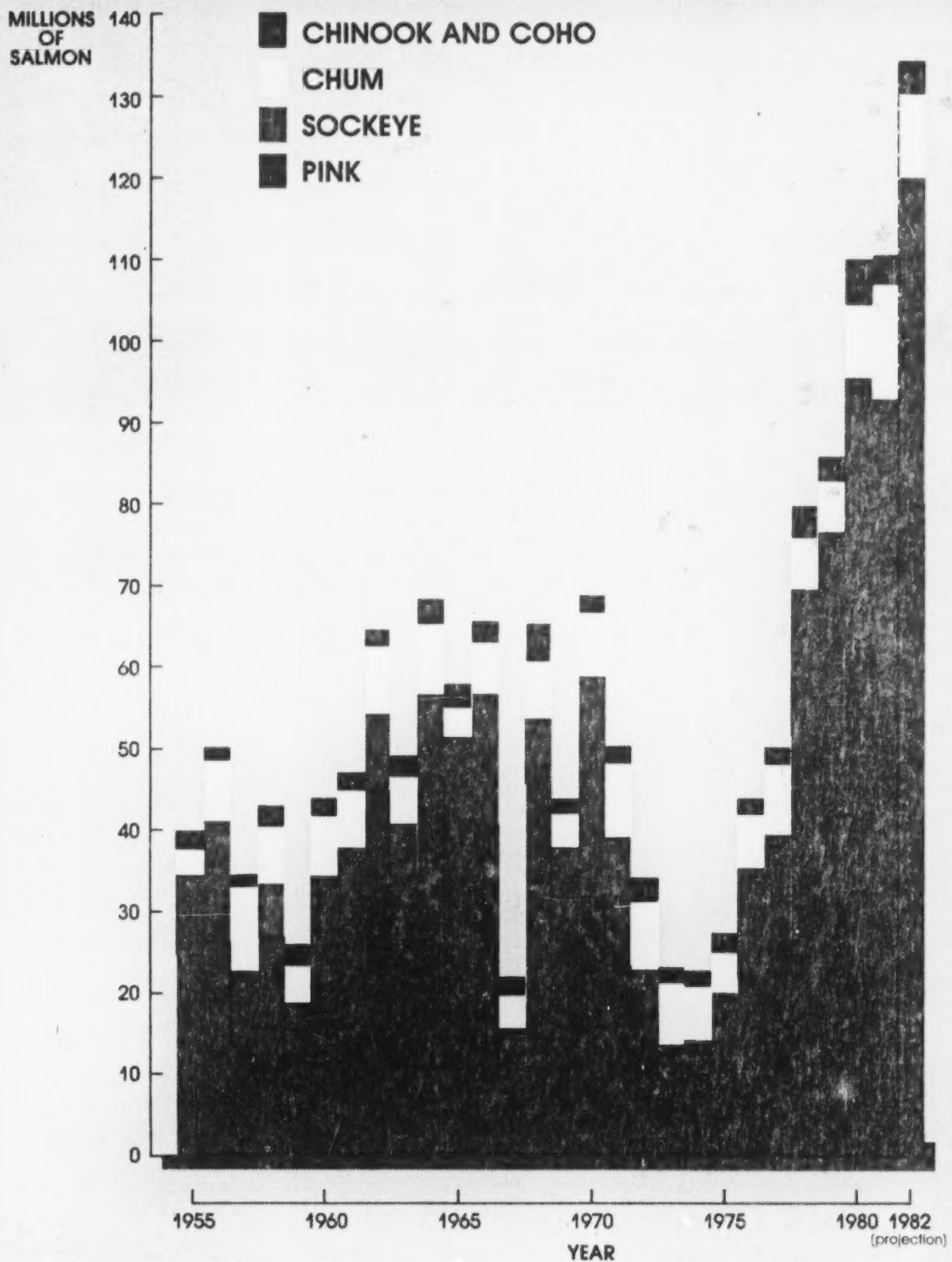
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Alaska Commercial Salmon Harvests



Source: ADF&G

Alaska Canned Salmon Packs and Values by Species

(48-LB CASE EQUIVALENTS)

	RED		PINK		CHUM		COHO		KING		TOTAL		
YEAR	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	Cases	Value (\$)	YEAR
1950	1,166,052	34,211,966	1,095,534	25,663,330	780,684	15,269,095	191,501	5,181,834	54,321	1,550,183	3,272,643	81,403,511	1950
1951	816,831	26,317,227	1,559,748	32,505,086	721,152	10,950,656	345,159	5,131,859	91,425	2,596,635	3,534,315	77,201,463	1951
1952	1,181,162	31,783,498	1,172,168	21,705,200	966,660	15,140,209	197,004	4,201,837	56,970	1,521,732	3,574,191	76,357,016	1952
1953	994,293	27,996,373	955,528	17,439,908	800,882	11,213,236	127,676	2,894,714	56,222	1,442,103	2,934,667	60,987,334	1953
1954	804,194	23,235,032	1,149,422	22,477,095	1,029,295	15,093,798	171,643	3,926,204	52,600	1,407,488	3,207,154	66,139,617	1954
1955	661,607	21,045,719	1,270,303	27,044,751	363,657	6,322,832	114,584	3,057,998	47,818	1,369,984	2,457,969	58,839,784	1955
1956	1,015,558	34,912,265	1,116,769	24,927,897	675,034	12,873,940	95,940	2,763,127	47,053	1,471,651	2,950,354	76,948,880	1956
1957	746,996	26,694,705	736,096	16,600,404	826,654	15,344,031	86,733	2,391,960	46,231	1,533,286	2,442,710	62,564,386	1957
1958	481,915	16,489,687	1,581,779	32,129,387	756,233	12,685,328	104,125	2,686,153	50,941	1,540,728	2,974,993	65,531,283	1958
1959	582,437	21,419,766	637,713	15,002,039	410,758	8,498,434	95,339	3,039,412	44,548	1,534,259	1,770,795	49,493,910	1959
1960	1,166,000	39,644,000	731,000	16,813,000	626,971	12,852,905	77,978	2,339,340	46,870	1,406,100	2,571,265	73,055,345	1960
1961	1,295,545	47,907,307	1,265,481	34,479,691	515,404	12,482,313	81,848	2,613,933	53,684	1,869,114	3,211,962	99,352,358	1961
1962	754,586	27,886,010	1,893,285	44,566,130	702,307	16,274,680	112,354	3,453,630	48,580	1,529,640	3,475,196	93,710,090	1962
1963	479,441	19,420,910	1,570,291	34,039,410	432,695	8,592,650	130,286	3,717,640	37,486	1,339,010	2,650,199	67,109,620	1963
1964	715,660	29,280,080	1,928,231	39,428,970	702,869	12,665,610	164,860	4,746,660	37,759	1,260,710	3,549,379	87,530,030	1964
1965	1,942,751	73,010,378	932,366	22,318,187	289,181	6,342,296	96,997	2,924,101	48,769	1,446,543	3,310,064	106,041,505	1965
1966	1,234,131	47,406,480	2,008,802	53,921,190	583,449	13,031,360	115,728	3,369,310	34,847	1,320,648	3,976,957	119,048,988	1966
1967	682,365	28,901,282	329,124	10,057,230	340,896	9,092,549	66,509	2,214,133	45,112	1,816,323	1,464,006	52,081,517	1967
1968	627,138	27,374,120	1,746,832	57,312,610	640,910	17,991,640	122,950	4,123,090	42,813	1,669,530	3,168,127	103,411,623	1968
1969	787,378	36,560,492	1,223,424	40,334,735	181,888	5,594,670	24,340	860,734	34,992	1,325,513	2,252,022	84,676,144	1969
1970	1,705,471	67,430,141	1,328,532	42,104,906	449,946	12,031,524	53,378	1,931,563	27,181	1,079,398	3,564,508	124,577,532	1970
1971	1,108,206	50,721,632	1,074,547	36,103,597	601,753	16,824,723	82,570	3,049,146	31,935	1,282,054	2,899,011	107,981,152	1971
1972	542,526	29,451,586	602,789	25,680,503	490,723	16,870,914	49,287	2,265,617	20,001	1,025,379	1,705,326	75,293,999	1972
1973	344,144	31,548,054	470,699	31,396,242	354,007	19,778,418	31,848	2,916,012	9,059	777,928	1,209,757	86,416,854	1973
1974	433,486	38,180,313	514,799	34,889,460	319,555	19,922,652	59,094	4,458,936	16,320	1,409,126	1,343,254	98,860,487	1974
1975	553,287	43,383,104	552,555	36,175,759	221,002	11,875,401	49,066	3,293,523	7,990	696,015	1,383,900	95,423,802	1975
1976	895,501	78,782,555	1,137,234	74,118,243	367,460	19,980,065	32,868	2,531,449	36,467	2,872,262	2,469,530	178,284,574	1976
1977	761,658	74,973,825	1,342,287	84,777,419	460,193	26,602,783	21,923	1,653,833	8,598	826,492	2,594,659	188,834,352	1977
1978	888,062	88,331,071	1,691,675	102,914,472	300,239	16,687,974	26,582	2,081,833	15,007	1,342,476	2,921,565	211,357,826	1978
1979	1,044,800	108,922,000	1,811,700	126,507,700	139,700	13,453,200	42,400	3,130,100	10,200	1,055,900	3,048,800	253,068,900	1979
1980	1,570,561	183,954,848	2,111,977	199,324,838	427,964	32,839,750	49,440	4,615,006	15,498	497,695	4,175,440	412,232,137	1980
1981	1,270,159	167,930,167	2,500,202	201,545,765	617,255	42,952,595	36,551	3,664,605	7,751	790,915	4,431,925	416,884,047	1981

Note: 1980 and 1981 data are preliminary.

Source: National Food Processors Association (figures are compiled from the portion of the pack examined by NFPA) and Seafood Business Report.

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Canned Salmon Prices



YEAR	SCKEY PUGET SOUND		RED ALASKA		KING ALASKA		COHO		PINK		CHUM		YEAR
	Halves	Tails	Halves	Tails	Halves	Tails	Halves	Tails	Halves	Tails	Halves	Tails	
1951	\$19-21	\$29-31	\$18	\$26	\$25	\$15	\$21	\$12.50	\$18	\$11			1951
1952	20-19	27-30	17.50-18	25	21-22	12-13	18-20	12	16	9			1952
1953	18.50-17.50	27	17	24	20	12	18	10.20-10.50	14	8-8.50			1953
1954	18.50-16.50	28-29	16-18	25	23	13.50	20	12.50-13	15	9			1954
1955	20-21	32-33	18.50-19.70	28	26	15	22-23	13.50-14.50	18	10-10.50			1955
1956	23-24	33-34	21-23	29-30	28-29	16	23-24	13-14.50	21	11.50-12			1956
1957	23-24	33-34	21-22	28-29	27-28	15-16	23	13	19-21	11.50-12			1957
1958	19-21	33-35	18-21	28-29	27-28	15-16.50	21	13-13.50	17	11-11.50			1958
1959	24-25	26-37	23-24	29-30	29-32	18-18.50	24-25	13.50-14	21	11.50-12			1959
1960	24-25	36-37	24-25	31-32	31	18.50-19	24-25	13.50	22.50	12-12.50			1960
1961	25	34-37	21.50-25	—	31-32	18.50-20	26	16-16.50	25-26	14.50			1961
1962	25	34	21-23	30-32	30-32	18-20	25-24	15	23	14			1962
1963	25-26	37	24-25	30-31	30-31	17.50-18	22-24	15	21	13-14			1963
1964	26-27	38-40	23-26	30	30-31	16-18	19-23	13-14	17.50-18.50	11.50-13			1964
1965	26	35-37	23-26	30-31	28-30	17-18	26-28	16-18	22-23	13-14			1965
1966	26	36-37	21-25	30-31	30	18-19	28	18	25	13-14			1966
1967	25-26	39-40	24-25.50	30-31	32-34	18-19	30-31	18	26-27	13.50-15			1967
1968	23-26	40-42	20-21	34	33-34	18-19	31	17-18	28	15-16			1968
1969	26.50-29	44.50-46	26.50-28	35-38	36-38	36-38	21-22	32-33	29	16-17			1969
1970	26.50-29	39-41	25.50-28	26-39	36-38	21-23	33-34	20-21	29-30	16-18			1970
1971	31-33	46	28-30	38-39	37-38	23-24	36	20-21	31-32	16-18			1971
1972	35-36	56-57	34-35	—	47-48	27	45	25	40	21			1972
1973	112	110-112	56-58	106	105	53-54	69-72	36-38	64-66	34-36			1973
1974	52	100	50	75-80	84-86	42-45	68-72	36-39	64-66	34-36			1974
1975	50	76-80	46-50	76	70-74	38-40	68-70	36-38	58-60	30-32			1975
1976	52-58	82-86	52-58	—	70-76	38-44	68-70	36-40	58-62	30-34			1976
1977	56-62	90-96	56-62	78	72-78	43-48	62-72	36-40	55-60	29-34			1977
1978	59-62	92-96	59-62	80	72-76	44-47	60-68	35-39	56-60	31-34			1978
1979	66	104-112	67-72	75	82-88	48-54	76-80	42-46	68-72	38-40			1979
1980	76	110-115	72-76	88	86-90	53-56	78-84	44-48	72-76	40-44			1980
1981	80	110	75	—	91-94	52-58	76	45-46	65	38-42			1981

Note: Canned salmon prices above reported by Seattle canners and brokers are for top quality stock only. The figures above reflect prices at which the major portion of the pack was sold.
Source: NMFS and Whitney-Fidalgo.



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United States Canned Salmon Packs by Species

48-LB. CASES

YEAR	SOCKEYE	PINK	CHUM	COHO	KING	STEELHEAD	TOTAL	YEAR
1950	1,290,249	1,097,811	1,317,761	352,126	205,981	10,534	4,274,462	1950
1951	936,120	2,001,352	981,524	466,880	244,832	14,862	4,645,570	1951
1952	1,413,670	1,175,052	1,290,667	397,534	159,086	19,011	4,455,022	1952
1953	1,162,614	1,396,388	966,418	207,144	158,437	19,645	3,910,646	1953
1954	1,323,830	1,151,126	1,329,756	215,123	129,933	13,379	4,163,147	1954
1955	749,328	1,682,000	466,353	198,806	176,661	13,737	3,286,885	1955
1956	1,182,554	1,129,346	758,059	188,571	165,957	8,171	3,432,658	1956
1957	963,566	943,564	924,943	203,553	142,066	7,605	3,184,897	1957
1958	948,965	1,550,025	911,816	150,699	137,425	6,313	3,705,243	1958
1959	736,886	819,825	582,096	190,560	126,274	9,897	2,465,538	1959
1960	1,297,986	734,776	678,424	94,560	100,096	6,174	2,912,016	1960
1961	1,441,673	1,361,874	707,065	165,217	115,058	6,839	3,696,726	1961
1962	841,001	1,949,328	761,213	163,482	116,222	5,785	3,837,031	1962
1963	602,045	1,956,482	462,385	165,549	95,462	7,654	3,298,577	1963
1964	777,715	1,939,613	710,181	219,037	95,487	2,914	3,745,307	1964
1965	2,051,667	998,552	311,522	176,391	130,556	3,747	3,672,435	1965
1966	1,382,371	2,061,390	609,393	204,431	83,677	2,875	4,344,047	1966
1967	865,077	616,152	363,133	139,079	91,552	2,072	2,077,065	1967
1968	715,090	1,770,239	665,513	167,330	69,356	2,846	3,390,374	1968
1969	902,602	1,299,281	183,797	59,424	71,652	2,994	2,519,750	1969
1970	1,904,900	1,337,526	486,976	134,024	49,666	254	3,913,346	1970
1971	1,379,289	1,194,294	576,834	164,250	70,194	2,495	3,393,356	1971
1972	610,810	728,428	622,081	66,182	48,175	1,122	2,076,798	1972
1973	406,963	486,170	311,893	65,216	26,299	4,020	1,300,561	1973
1974	652,388	499,950	464,901	224,198	64,530	1,409	1,907,376	1974
1975	649,984	621,398	275,244	63,403	16,756	—	1,626,785	1975
1976	1,024,384	1,219,019	339,416	52,903	22,848	—	2,658,570	1976
1977	1,054,681	1,552,841	477,715	40,827	16,092	—	3,142,156	1977
1978	1,041,618	1,956,612	368,354	36,923	18,970	—	3,422,486	1978
1979	1,068,763	1,956,542	153,202	35,050	12,222	—	3,225,779	1979
1980	1,579,355	2,111,977	438,770	55,238	16,416	—	4,201,756	1980
1981	1,297,113	2,652,305	629,167	48,098	7,974	—	4,634,657	1981

Note: 1981 data preliminary. Source: National Food Processors Association and NMFS.

Pacific Salmon Landings

(THOUSANDS OF FISH)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Alaska											
Chinook	662	553	550	558	455	532	463	800	810	670	820
Sockeye	14,180	6,590	4,490	4,878	7,455	11,783	11,908	17,773	28,366	33,210	36,459
Coho	1,448	1,831	1,457	1,861	1,014	1,432	1,319	2,295	3,053	3,070	3,182
Pink	23,528	15,920	9,802	9,859	12,984	24,750	25,880	51,492	48,549	63,466	56,983
Chum	7,679	7,065	6,020	4,729	4,322	5,924	6,835	6,335	5,780	9,887	12,427
TOTAL	47,497	31,959	22,319	21,886	26,229	44,423	46,405	78,695	86,559	110,283	109,872
Washington											
Chinook	522	473	663	372	588	554	573	470	378	379	327
Sockeye	3,073	1,161	2,687	2,511	1,691	1,334	1,869	1,394	1,690	548	1,301
Coho	937	779	1,126	1,275	1,175	900	1,062	985	952	1,649	1,143
Pink	2,478	—	2,363	—	1,330	—	2,034	—	3,933	2	4,088
Chum	182	894	607	463	215	823	471	1,290	126	948	494
TOTAL	7,192	3,307	7,446	4,621	4,999	3,611	6,009	4,139	7,079	3,526	7,353
Oregon											
Chinook	103	127	363	224	225	184	340	192	340	276	192
Coho	1,490	825	796	1,137	657	1,827	446	612	809	472	649
TOTAL	1,593	952	1,159	1,361	882	2,011	786	804	1,149	748	841
California											
Chinook	434	492	817	492	579	540	563	519	659	575	549
Coho	442	158	348	656	204	622	35	238	164	50	78
TOTAL	876	650	1,165	1,148	783	1,162	598	757	823	625	627

Note: 1981 data are preliminary.

Source: State Fisheries Agencies

1981 Washington and Oregon Canned Salmon Packs

(48-POUND CASE EQUIVALENTS)

COMPANY	LOCATION	RED	PINK	CHUM	COHO	KING	SMOKED	TOTAL
WASHINGTON								
Bumble Bee Seafoods	Bellingham	7,952	17,830		634	102		26,518
Guilford Packing Co., Inc.	Port Townsend							78
Icicle Seafoods	Seattle*		1,000					1,000
Kirkland Custom Cannery	Kirkland	258		20	223		371	872
Pacific Salmon Co., Inc.	Seattle		3,000		3,000			6,000
Peter Pan Seafoods, Inc.	Bellingham	1,882	19,193		580			21,655
J.J. Theodore Co.	Friday Harbor		2,287					2,287
OREGON								
Bell Buoy Crab Co.	Seaside					216	81	297

*Custom processed.

Percent Alaska Salmon Canned Versus Percent Fresh, Frozen and Cured

YEAR	RED		PINK		CHUM		COHO		CHINOOK		TOTAL		YEAR
	% Canned	% Frozen	% Canned	% Frozen	% Canned	% Frozen	% Canned	% Frozen	% Canned	% Frozen	% Canned	% Frozen	
1971	91.38	8.62	98.0	2.00	80.87	19.13	57.51	42.49	18.08	81.92	85.88	14.12	1971
1972	93.05	6.95	95.41	4.59	72.17	27.83	30.56	69.44	13.78	86.22	77.26	22.74	1972
1973	72.95	27.05	93.57	6.43	50.70	49.30	20.58	79.42	6.05	93.95	61.03	38.97	1973
1974	88.02	11.98	89.68	10.32	53.35	46.65	30.90	69.10	11.22	88.78	66.72	33.28	1974
1975	78.81	21.19	93.58	6.42	41.25	58.75	4.83	95.17	8.00	92.00	67.25	32.75	1975
1976	81.87	18.13	91.72	8.28	61.57	38.43	21.04	78.96	22.35	77.65	75.87	24.13	1976
1977	68.51	31.49	92.41	7.59	60.24	39.76	12.73	87.27	5.68	94.32	71.02	28.98	1977
1978	56.66	43.34	89.00	11.00	46.52	53.48	13.67	86.33	7.35	92.65	64.49	35.51	1978
1979	42.51	57.49	83.43	16.57	40.04	59.96	13.08	86.92	6.23	93.77	57.09	42.91	1979
1980	45.31	54.69	83.54	16.46	47.62	52.38	21.92	78.08	9.82	90.18	57.87	42.13	1980
1981	40.78	59.22	78.01	21.99	50.69	49.31	10.87	89.13	3.09	96.91	55.14	44.86	1981

Source: Seafood Business Report

Bristol Bay Inshore Red Salmon Runs

(EXCLUSIVE OF JAPANESE AND KOREAN HIGH-SEAS CATCH)
FIGURES IN MILLIONS OF FISH

DISTRICT	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Naknek-Kvichak	6.5	5.0	14.6	32.8	9.4	3.0	.8	6.49	18.3	5.9	4.6	10.1	27.9	40.6	14.6
Egegik	1.7	1.0	1.9	2.3	1.9	1.2	.5	1.44	2.1	1.8	2.4	2.0	3.3	3.7	5.2
Ugashik	.4	.2	.3	.9	1.5	.1	.04	.06	.4	.5	.3	.1	2.1	4.2	3.3
Nushagak	1.4	1.7	2.0	3.2	2.6	1.0	8.	2.78	2.9	2.7	1.8	6.7	6.4	12.7	10.6
Togiak	.2	.1	.3	.4	.4	.1	.2	.23	.4	.5	.4	.8	.7	1.2	1.0
TOTAL*	10.1	8.0	19.0	39.6	15.8	5.4	2.4	11.0	24.1	11.5	9.5	19.7	40.4	62.4	34.6

*Total slightly irregular because of small runs to rivers not shown in table.

Note: 1980 and 1981 data preliminary.

Source: ADF&G

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B.C. Canned Salmon Export Prices

YEAR	SOCKEYE		PINK	
	½-lb. Flats 96's	¼-lb. Flats 96's	½-lb. Flats 96's	¼-lb. Flats 96's
1950	\$ 33.00	\$ 19.25	\$ 19.00	\$12.00
1951	28.00	21.50	20.50	12.75
1952	33.00	19.00	16.50	10.75
1953	30.00	17.50	16.50	10.75
1954	32.00	18.50	17.50	11.75
1955	37.00	21.50	19.50	12.75
1956	40.00	23.00	22.50	14.25
1957	40.00	23.00	22.50	14.25
1958	37.00	21.00	21.50	13.75
1959	46.00	27.00	24.50	16.25
1960	50.00	29.00	26.50	17.25
1961	44.00	26.00	26.50	17.27
1962	48.00	28.00	26.00	17.00
1963	50.00	30.00	23.50	15.00
1964	50.00	31.00	26.50	16.50
1965	50.00	29.00	30.00	18.00
1966	48.00	28.00	30.00	18.00
1967	48.00	28.00	31.00	18.00
1968	42.00-48.00	26.00	32.00	18.50
1969	55.00	31.00	38.00	22.00
1970	51.00	29.50	36.00	21.00
1971	54.00	32.00	36.00	21.00
1972	66.00	37.00	40.00	23.00
1973	100.00	56.00	72.00	40.00
1974	92.00	52.00	72.00	42.00
1975	110.00	60.00	72.00	40.00
1976	110.00	66.00	72.00	43.00
1977	114.00	68.00	74.00	47.00
1978	130.00	74.00	82.00	50.00
1979	156.00-160.00	92.00-96.00	96.00-102.00	58.00-62.00
1980	164.00	96.00	108.00	67.00
1981	170.00	100.00	112.00	68.00

Note: All figures are opening prices subject to change FOB Vancouver, in Canadian Funds.

Source: Canadian Fishing Co.

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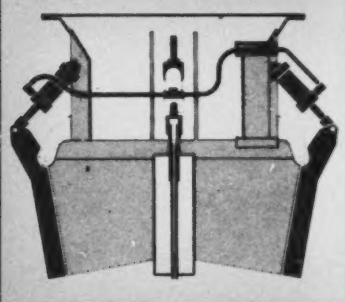
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British Columbia Canned Salmon Packs (48-LB. CASES)

YEAR	SOCK- EYE	SPRINGS	COHO	PINK	CHUM	TOTAL CASES
1950	408,041	9,133	116,642	446,516	498,984	1,482,560
1951	428,299	13,698	312,845	736,093	461,806	1,956,397
1952	449,174	9,064	64,095	675,836	91,514	1,293,435
1953	510,147	13,048	110,164	794,764	394,113	1,825,267
1954	680,718	14,080	128,080	335,550	580,574	1,742,736
1955	244,821	17,853	185,723	831,253	124,860	1,406,100
1956	404,392	11,671	217,915	363,633	203,710	1,202,575
1957	228,452	10,481	217,915	751,608	239,539	1,449,120
1958	1,079,155	10,475	132,403	455,518	229,292	1,908,056
1959	256,170	15,231	213,106	458,596	133,128	1,077,097
1960	226,844	5,916	91,504	219,564	86,818	631,150
1961	398,205	7,921	241,378	666,290	95,385	1,410,157
1962	297,716	7,174	187,735	1,188,661	134,483	1,816,584
1963	158,375	10,000	146,099	757,452	119,190	1,191,887
1964	343,358	9,127	204,732	464,107	232,722	1,255,308
1965	245,798	18,891	295,284	287,925	65,216	913,957
1966	407,949	14,585	281,623	951,794	160,784	1,819,215
1967	558,892	14,679	146,677	650,142	94,022	1,465,708
1968	611,011	7,416	187,594	669,347	270,688	1,746,989
1969	359,608	5,301	57,947	154,188	46,524	624,153
1970	395,606	10,024	114,555	660,777	242,389	1,423,882
1971	568,756	11,653	221,463	502,324	98,508	1,404,005
1972	312,907	11,608	83,755	485,164	278,451	1,172,752
1973	642,601	11,258	116,197	355,695	423,364	1,550,114
1974	709,180	20,268	160,051	307,192	230,634	1,428,882
1975	164,055	14,013	61,081	240,592	37,093	517,370
1976	376,047	11,187	69,850	483,054	85,540	1,025,830
1977	494,172	29,569	74,180	686,911	61,309	1,346,967
1978	485,748	8,916	53,960	456,058	121,487	1,126,876
1979	295,818	12,953	43,061	569,337	33,689	955,225
1980	368,844	6,768	88,217	472,462	176,884	1,114,426
1981	648,401	7,910	62,957	1,105,915	89,462	1,914,645

Note: 1981 pack includes 259,143 cases packed from salmon imported from the U.S. and 9,745 cases packed from the previous year's frozen stock.
Source: Dept. of Fisheries and Oceans, Vancouver, B.C.

United States Supply, Stocks and Shipments of Canned Salmon

	1979-80	1980-81	1980-82	% Change from One Year Ago
(Basis 48/1 lb.)				
Carryover, June 1	643,612	515,271	570,284	+ 11
Pack & Imports to 12/1	3,313,613	4,356,116	4,644,812	+ 7
Supply to December 1	3,957,225	4,871,387	5,215,096	+ 7
Stocks, December 1	2,285,432	2,677,624	3,443,618	+ 29
Shipments, 6/1-12/1	1,671,793	2,193,763	1,771,478	- 19
(Actual Cases)				
Carryover, June 1	964,487	741,290	744,267	0
Pack & Imports to 12/1	4,688,932	6,221,571	6,587,154	+ 6
Supply to December 1	5,653,419	6,962,861	7,331,421	+ 5
Stocks, December 1	3,194,794	3,615,222	4,851,925	+ 34
Shipments, 6/1-12/1	2,458,625	3,347,639	2,479,496	- 26

Source: National Food Processors Association

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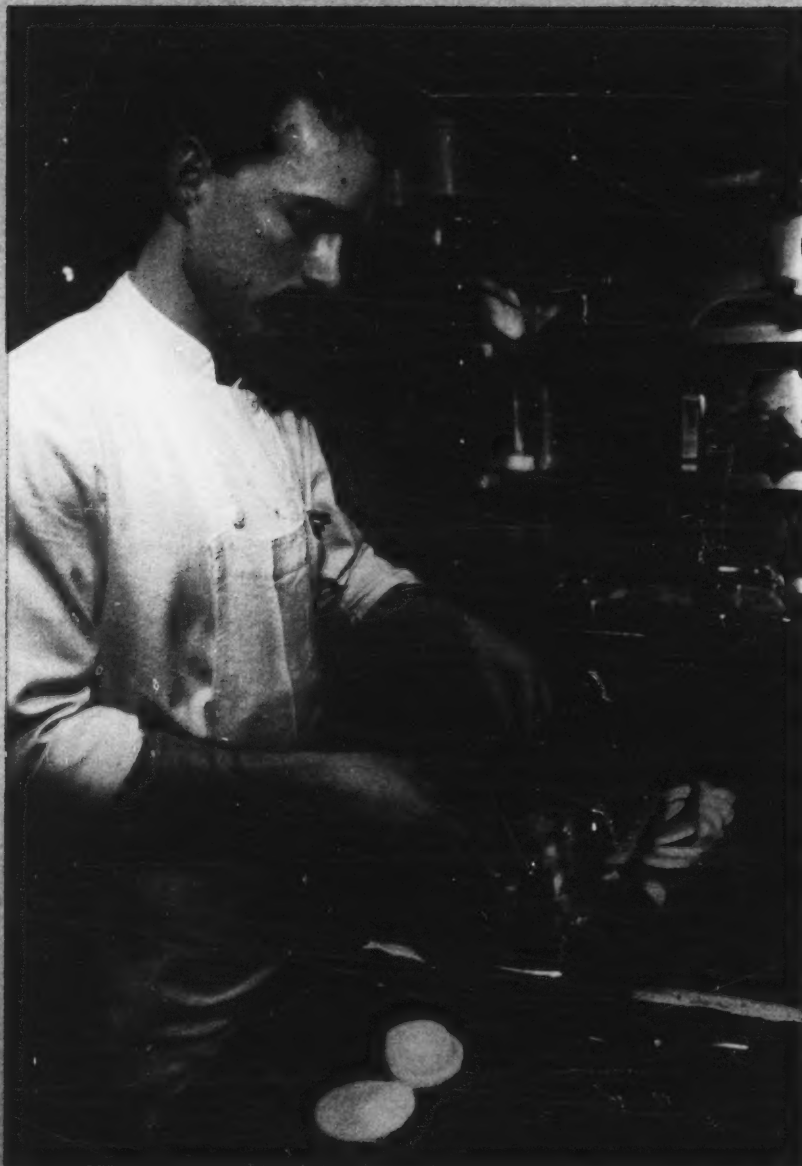
Fraser River Sockeye Salmon Landings (IN FISH)

YEAR	BRITISH COLUMBIA	WASHINGTON	TOTAL
1950	894,469	1,220,893	2,115,362
1951	1,288,162	1,136,795	2,424,957
1952	1,154,383	1,113,475	2,267,858
1953	1,992,343	2,032,437	4,024,780
1954	4,722,463	4,806,258	9,528,721
1955	1,108,081	1,006,610	2,114,691
1956	894,836	906,872	1,801,708
1957	1,360,760	1,689,625	3,050,025
1958	5,241,617	5,257,316	10,498,933
1959	1,581,883	1,810,738	3,392,621
1960	1,255,195	1,198,969	2,454,164
1961	1,357,099	1,378,392	2,735,491
1962	836,399	758,637	1,595,036
1963	686,681	1,314,045	2,000,726
1964	514,548	508,087	1,022,635
1965	1,039,195	1,026,118	2,065,313
1966	1,350,154	1,337,215	2,687,369
1967	1,875,482	2,087,826	3,963,308
1968	920,092	885,870	1,805,962
1969	1,675,536	1,586,176	3,261,712
1970	1,541,771	1,350,217	2,891,988
1971	3,114,298	2,816,129	5,930,427
1972	1,081,217	1,128,192	2,209,409
1973	2,578,970	2,627,581	5,206,551
1974	2,500,019	2,461,528	4,961,547
1975	644,473	1,563,851	2,208,324
1976	1,382,484	1,322,038	2,704,522
1977	1,971,153	1,789,609	3,760,762
1978	1,317,115	1,362,446	2,679,561
1979	1,620,265	1,775,876	3,396,141
1980	456,158	466,173	922,331
1981	1,159,653	1,294,486	2,454,139

Note: 1981 data preliminary.

Source: International Pacific Salmon Fisheries Commission

Chefs Celebrate Seafood



Special: Seafood

*The fastest growing
entrée in dinner house
restaurants across
the country*

By Jon Rowley

Photographs by Michael Nakamura



Delectable feasts prepared with pride are offered by Mike Doctulero (left), chef at The Other Place, and Chef Miles Wilcox (above) from McCormicks.

"A dynamite seafood item will outsell anything on the menu," claims Chef David Galbraith at Seattle's Mirabeau restaurant. Seattle diners are getting serious about seafood, and restaurants that couple quality seafood with innovative preparation and presentation are reporting increasing sales and profits.

"Working with fish of exceptional quality is like a celebration!" says Robert Rosellini of The Other Place, where seafood sales have jumped from 12 percent to 60 percent of total restaurant sales in two years. "You see a high level of enthusiasm in the kitchen, the waiters, and the customers."

U.S. consumers eat only 13 pounds of seafood per capita annually, which suggests that Americans don't like fish. Several Seattle chefs are quick to point out that the public's ability to get interested in fish rests on the quality of the product available to them. They admit that it was not a good idea to order fish in a restaurant a few years ago, when a chef's only challenge was to create goopy sauces and heavy batters to mask the flavor and odor of old, smelly fish. "Because of what I've learned about quality, I couldn't use fish today that I was serving three years ago," admits Rosellini, one of the local pioneers in quality awareness.

"If fish has any discernible odor, we can't use it in this restaurant," says Chef Karl Beckley of the Green Lake Grill, where seafood represents 75 percent of sales compared to 15 percent two years ago. "If we can't get a first-rate product we don't serve fish, which is unfortunate because it's what our customers want." Seafood dishes are listed on a hand-written chalkboard at the Grill, enabling the chef to offer the best of what's available that day.

To serve the best seafood one must have species-by-species criteria for evaluating degrees of quality. At least three information-hungry chefs have gone out on fishing

boats to observe firsthand how method of harvest and on-board handling affect quality. Others have observed unloading procedures and entered into a continuing dialogue with quality-conscious fishermen. As a result, a few fishermen are now bleeding fish while alive, producing a whiter flesh with better flavor that stays prime longer. "No comparison!" exclaims Wayne Ludwigson, kitchen manager of the popular Ray's Boathouse, who prefers to purchase whole fish, keeping them iced until needed and doing his own filleting.

"This is when we started learning about quality and really started to pay attention to what comes in the back door," explains Bob Viggors, general manager of Ray's Boathouse, pointing to a sharply ascending sales curve. Viggors attributes a 16 percent gain in total 1981 sales to a quality program instituted in the summer of 1980. Fresh items appear on the daily chalkboard. The printed menu relies on frozen products. Ludwigson looks for a frozen product that is virtually indistinguishable from the best fresh in appearance, flavor and texture. After a discussion with the producer about pre-freezer handling, the product is subjected to rigorous cooking and taste tests by the Boathouse staff.

Ludwigson has unloaded 10,000 pounds of frozen-at-sea, troll-caught salmon directly from the vessel for the past two years. He insists that the quality of frozen salmon now served at Ray's Boathouse is as good as can be found anywhere in the world, fresh or frozen. He is just as proud of his other frozen purchases which include 1,000 pounds of bled, jig-caught ling cod.



"In order to serve fresh seafood, you have to be very flexible and go by the criteria of fish availability. I like to cultivate the small guy, and sell what he is catching at the time."

Miles Wilcox,
McCormicks



"When making bulk purchases of frozen product I prefer to deal with individual fishermen so I know that the handling and freezing procedures have been identical for each fish."

Wayne Ludwigson,
Ray's Boathouse

"When making bulk purchases of frozen product I prefer to deal with individual fishermen so I know that the handling and freezing procedures have been identical for each fish. The cooks on the line can get cooking time down to a fine art if each piece of fish is of uniform quality," Ludwigson explains. "It also gives the waiters a lot of confidence."

It takes several months of serving outstanding seafood day in and day out before a restaurant establishes credibility with customers for its ability to deal with seafood properly. Then, out of nowhere, business often starts booming beyond expectations. "We've worked very hard to obtain the best possible quality for the last two years and it's paying off for us," says McCormicks Manager Jerry Barron, who reports monthly gross sales increases in 1981 ranging from \$15,000

to \$25,000.

McCormicks has the most ambitious "fresh" program in Seattle, dealing with up to two dozen different fresh items on a daily basis. A new menu, the "Fresh Sheet," is printed every morning. "A wide variety of top quality items is a big factor in our success," claims Barron. "When you've eaten salmon, cod, crab, and shrimp enough times you're ready to try something new. When the restaurant has credibility with customers, they'll try anything."

Preferring to get as close to the source as possible McCormicks Chef Miles Wilcox makes daily contact with an extensive network of distributors, large and small wholesalers, fishermen, and a few other restaurants. If an order doesn't meet the restaurant's quality standards, Wilcox promptly sends it back. Wilcox has a knack for



"If fish has any discernible odor, we can't use it in this restaurant . . . If we can't get a first-rate product we don't serve fish, which is unfortunate because it's what our customers want."

Karl Beckley,
Green Lake Grill

"Working with fish of exceptional quality is like a celebration! . . . You see a high level of enthusiasm in the kitchen, the waiters, and the customers."

Robert Rosellini,
The Other Place

customers want to get involved with what they are eating," says Karl Beckley of the Green Lake Grill. "They want to be educated." Waiters are furnished with information about basic fish biology, quality criteria, method of harvest, seasonality, and perhaps even the eccentric personality of a particular fisherman who has a very personal approach to catching and handling his product. Likewise, a fisherman takes pride in knowing his product is treated with respect in a restaurant and that it is well received by the customers.

There are cost factors associated with producing exceptionally high quality seafood because of the extra effort that goes into handling and the expense of rapid transport. In tough economic times can restaurants afford the additional expense of high quality seafood? "After learning what quality seafood is all about and what it means to our business we can't afford not to pay the price," claims Bob Viggors of Ray's Boathouse. "Repeat customers are unforgiving if the quality slides."

Recent foodservice studies indicate 60 percent to 75 percent of U.S. seafood dollars are spent in restaurants, making the restaurant trade a key market area for the seafood industry. The National Restaurant Association predicts that more people will eat even more meals away from home in the next decade. The recent success of leading Seattle restaurants with high-quality seafood demonstrates that people will eat a lot more seafood when the quality is consistently good . . . even preferring it to meat and poultry.

developing unique sources for a product unavailable even to the wholesalers.

Chefs agree that the fishing industry needs to pay more attention to little-used species that are often thrown away and to make fish available in more forms. McCormicks Manager Barron maintains the best place to test market a new fish is in a restaurant that is willing to work with it. Items like skate are gaining in popularity because intrepid chefs were not dissuaded by customer unfamiliarity.

Variety can also be achieved by buying whole fish. This gives a chef the option of steaking, filleting, or in the case of small fish, serving the fish on the bone. The trimmings from lean fish can be used to make concentrated fish stocks, the base for flavorful sauces. Other fish trimmings can be

used for court bouillons, for poaching, or rich soup bases. Rockfish cheeks have shown up on the menu of at least one restaurant.

Shrimp with roe, once considered virtually unmarketable, is now coveted by some chefs, who use the roe in sauces or as an attractive garnish. Other fish roes are also being requested.

With good chefs desiring to control the products they use, there is a noted preference for live shellfish. Live crab (king tanner, and Dungeness), abalone, scallops, geoduck, crayfish, and even shrimp are finding an eager, albeit as yet small, market.

The restaurants mentioned are finding it worthwhile to generate an information flow from the fisherman to the diner and vice versa. When seafood is very good, customers want to know everything about it. "Our

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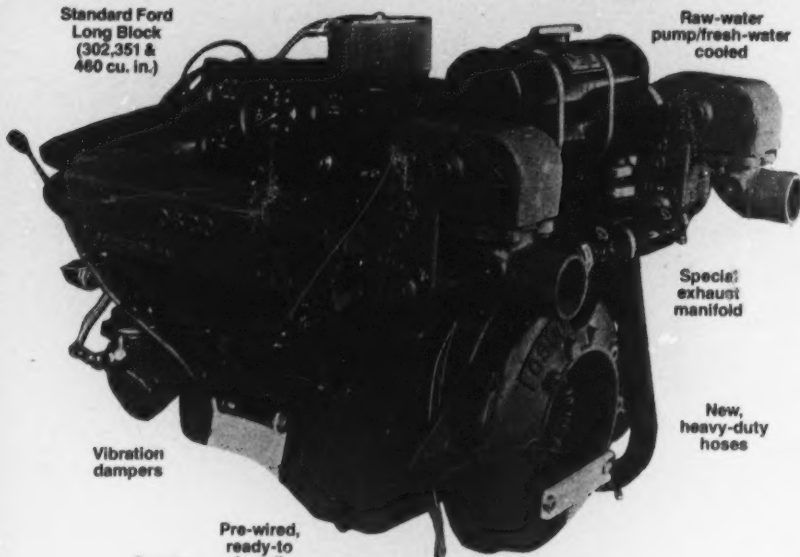
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SHELLFISH: Shrinking Supplies Explode Prices

• King crab all but disappeared from Bering Sea grounds in 1981, throwing shock waves throughout the industry. Wholesale prices, already at record levels, will continue to climb. Landings and inventories early in 1982 are half the levels of one year ago. Processors needing to generate a cash flow sold their pack at record prices — which were also bargain prices, considering the low supply. The cheaper

product is off the market now and major packers are confident of steady price increases throughout the summer.

Although most company packs were half those of the previous year, processors are hopeful their supplies will sell at twice the price. Beginning of March prices listed sections FOB Seattle at \$5 per pound, as compared to \$3.15 to \$3.80 in 1981. Speculators estimate the price will hit almost \$6

for sections before next season's supply comes on the market. Prices slipped only slightly after the holidays this year, normally a period of sharp decline.

King crab meat prices have also escalated, reaching \$14 a pound in early March. The meat market continues to be steady, not absorbing great amounts of product.

Japan's share of Alaska's king crab
(continued on page 53)

1981 Alaska Shellfish Landings by Area

(POUNDS)

AREA	KING CRAB	DUNGENESS CRAB	TANNER CRAB	HAIR CRAB	TRAWL SHRIMP	POT SHRIMP	SCALLOPS	OCTOPUS	*OTHER
Southeast	1,301,820	6,751,159	2,775,368	—	1,022,163	84,015	445,934	7,691	369,224
Prince William Sound	34,516	1,509,257	2,761,251	—	70,560	144,903	—	—	28,709
Cook Inlet	1,736,087	1,850,977	2,994,997	—	5,031,673	195,184	—	13,856	443,144
Kodiak	23,265,066	5,510,637	11,739,148	—	18,761,792	2,511	424,394	5,872	8,186
Chignik	48,864	—	2,640,274	—	70,948	—	—	—	—
South Peninsula	3,277,548	38,650	3,298,510	—	—	—	—	—	—
Dutch Harbor	6,973,665	—	619,683	6,806	2,398,458	379	—	2,000	—
Adak/Western Aleutians	2,657,924	—	220,716	—	—	—	—	—	—
Bering Sea	48,746,245	—	80,083,517*	2,205,753	—	—	—	26,934	—
TOTAL	88,053,643	14,901,177	107,474,389	2,212,559	27,255,188	417,054	889,777	53,084	849,263

*Other distribution: Southeast — abalone; Prince William Sound, Cook Inlet, Kodiak — razor clams.

•Includes 50,483,090 pounds *opilio*.

Note: Data are preliminary.

Source: ADF&G



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1981 West Coast Frozen Shellfish

(WHOLE POUNDS, IN SHELL)

COMPANY AND LOCATION	KING CRAB	TANNER CRAB BAIRDI	OPILIO	DUNGENESS CRAB	SHRIMP	SCALLOPS	CLAMS	OYSTERS	MISC.	TOTAL
ALASKA										
Alaska Food Co., Inc., Kodiak	58,837	286,148		39,853	207,665	266,850				871,153
Alaska Packers Assn., Inc., Chignik	270,105	1,973,014	81,280							2,324,399
Kodiak	571,622	617,935			2,657,505					3,847,062
Alaska Shell, Inc., Akutan	1,770,358	2,356,146	3,527,455							7,653,959
Columbia Wards Fisheries, Alitak	179,110									179,110
Kodiak	746,550		539,150							1,285,700
Dutch Harbor Seafoods, Ltd., P/V Galaxy & P/V Viceroy	3,152,177	1,083,193	2,878,723							7,114,093
Halibut Producers Co-op, Sitka					2,147					2,147
Iceberg Seafoods, Inc., Homer	920,224	1,302,208		796,817	4,002,193					7,021,442
Petersburg	683,323	431,262		380,156						1,494,741
Seward		741,982								741,982
P/V Arctic Star	3,502,307	1,206,950	7,398,985							12,108,242
Juneau Cold Storage, Inc., Juneau	136,139	682,510		473,094		65,142				1,356,885
Kodiak King Crab, Inc., Kodiak	936,827	1,505,988		257,009	3,108,138	31,071				5,839,033
Morpac, Inc., Cordova							3,600			3,600
Pacific Pearl Seafoods, Inc., All Pan Alaska Fisheries, Inc., Unalaska	3,353,109	3,391,897	4,526,723		4,244,507					15,516,236
Pan Alaska Fisheries, Inc., Unalaska	14,800,000	5,105,000	10,833,000						300,000	30,838,000
Peter Pan Seafoods, Inc., King Cove	2,263,935									2,263,935
Sea-Alaska Products, Inc., M/V Robert E. Resoff, Dutch Harbor	4,672,239	4,347,358	4,118,188						24,933	13,162,718
Seawest Industries, Inc., Akutan	2,500,000	4,300,000							600,000	7,400,000
Sitka Sound Seafoods, Inc., Sitka	64,147	88,852		204,613	30,461	20,109			87	408,269
St. Elias Ocean Products, Inc., Cordova	636	809,490		1,352,587		168,933	19,026			2,350,672
Swiftsure, Anchorage/Kodiak	1,390,000	1,140,000								2,530,000
Trans-Pacific Seafoods, Inc., M/V Deep Sea, Paviot, Penguin	1,325,000	1,858,333	266,667							3,450,000
Trident Seafoods Corp., M/V Billikin, Bountiful, Mr. J. Tempest	2,806,640	495,998	722,628							4,025,266
Ultra Alaska Associates, Inc., Ultra Processor I	861,315	725,900	1,211,919							2,799,134
Universal Seafoods, Ltd., Dutch Harbor	3,842,100	3,658,312	2,627,494					1,319,603		11,447,509
Ursin Seafoods, Inc., Kodiak	2,746,848	2,054,736		816,418						5,618,002
Western Alaska Fisheries, Kodiak	1,000,000	1,000,000				200,000				2,200,000
Yakutat Seafoods, Yakutat				778,228						778,228
TOTAL ALASKA	54,563,548	41,165,212	38,532,212	5,098,775	14,252,616	751,905	22,626		2,244,623	156,631,517
BRITISH COLUMBIA										
Prince Rupert Fishermen's Cooperative Assn., Prince Rupert				745,550	14,925				24,038	784,513
WASHINGTON										
Canterbury Oyster Farms, Oulicene							2,674	4,815		7,489
Chinook Packing Co., Chinook	490,000	292,000		200,000	1,300,000					2,282,000
Ellison Oyster Co., Olympia						7,557	321,244			328,801
Guilford Packing Co., Inc., Port Townsend							62,346			62,346
Jessie's Ilwaco Fish Co., Inc., Ilwaco					1,500,000	3,250,000				4,750,000
Mutual Fish Co., Inc., Seattle	5,000				1,000		50,000	50,000		106,000
Olympia Oyster Co., Shelton							184,170	52,280	18,744	255,194
Pacific Salmon Co., Inc., All plants							150,000			150,000
Seafarms Pacific, Port Angeles							500,000	5,000,000		5,500,000
Sea Run Seafoods Ltd., Seattle	513,000	72,000	210,000				88,000			883,000
Seattle Seafoods, Seattle	809,788*	127,185*	31,796		70,795		83,894			923,458
Seawest Industries Inc., Bellingham				150,000						150,000
Stewart Seafoods Inc., Everett							134,346			134,346
Swinomish Fish Co., LaConner					500		3,000			3,500
Wiegardt Bros. Inc., Ocean Park								8,426,250		8,426,250
TOTAL WASHINGTON	1,617,788	491,185	241,796	350,000	2,872,295	3,250,000	1,265,987	13,854,589	18,744	23,962,384
OREGON										
Alaska Packers Assn., Inc., Hammond				1,111,877	4,713,943	608,880				6,434,700
Newport					2,494,739					2,494,739
Bell Buoy Crab Co., Seaside				264,400*			17,880			282,280
Bumble Bee Seafoods, Astoria/Newport				838,133	4,082,067	107,093			716	5,028,009
TOTAL OREGON				2,214,410	11,290,749	715,973	17,880		716	14,239,728
CALIFORNIA										
California Sunshine Inc., Sacramento									300,000	300,000
Meredith Fish Co., Sacramento					8,000,000					8,000,000
Young's Food Processing, Los Angeles					1,250,000*	950,000*		125,000*		2,325,000
TOTAL CALIFORNIA					9,250,000	950,000		125,000	300,000	10,625,000

*Not including 516,433 pounds king crab meat and 37,545 pounds snow crab meat.

*Not including 45,420 pounds sections.

*Shucked or peeled.

Alaska Shellfish Landings

(THOUSAND POUNDS)

YEAR	KING CRAB	TANNER CRAB	DUNGENESS CRAB	SHRIMP
1961	43,412	7	4,592	15,981
1962	52,782	1	8,989	16,943
1963	78,740		12,084	15,126
1964	86,720	14	12,709	7,727
1965	131,671		8,895	16,819
1966	159,202		5,053	28,193
1967	127,716	118	11,598	41,812
1968	82,037	3,247	13,247	42,077
1969	57,730	11,206	11,304	47,851
1970	52,061	14,473	9,696	74,256
1971	70,703	12,880	3,749	94,891
1972	74,427	30,135	5,448	83,830
1973	76,824	61,719	6,423	119,964
1974	95,214	63,906	3,818	108,741
1975	97,629	46,857	3,034	98,984
1976	105,899	80,771	1,546	128,682
1977	99,600	98,500	1,160	117,000
1978	122,930	130,630	7,170	73,330
1979	149,660	130,589	6,334	50,613
1980	185,034	114,921	5,895	51,574
1981	88,054	107,474	14,901	27,672

Note: 1980 and 1981 data are preliminary
Source: ADF&G

Alaska Shellfish Wholesale Prices

(END OF FEBRUARY)

PRODUCT	CANS/CASE (Net Weight)	PRICE RANGE	
		1981	1982
Canned Crab		(\$/Case)	
Snow	24/7 oz fancy	62.00	
Snow	24/6 1/2 oz fancy	68.00-70.00	72.00
Canned Shrimp			
Northern Tiny	24/4 1/2 oz fancy	33.50	33.50-34.50
Northern Tiny	24/4 1/2 oz broken	68.00-70.00	29.50-30.50
Frozen Crab		(\$/lb)	
Dungeness Meat	6/5 lb vacuum tins fancy	7.25	7.00
King Meat	6/5 lb ctn fancy	7.75-8.25	13.25-14.50
King Sections	20 lb ctn fancy	3.15-3.80	5.15-5.60
Snow Meat	6/5 lb ctn fancy	5.25-5.50	6.15
Snow Sections, Large	20 lb ctn fancy	2.00-2.10	2.80-3.45
Snow Sections, Small	20 lb ctn fancy	1.15-1.20	1.80-3.30
Frozen Scallops	10/15 lb blocks, fancy	5.85-6.00	4.30
Frozen Shrimp			
Northern Tiny	6/5 lb IQF	4.15-4.50	3.10-3.40
Northern Tiny	6/5 lb vacuum tin	4.50	3.40
Northern Tiny	6/5 lb blocks	4.50	3.15-3.40
Northern Tiny	12/1 lb bags (IQF)	4.30	3.70
Northern Tiny	12/8 oz bags (IQF)	4.30	

Note: All prices FOB Seattle
Source: NMFS



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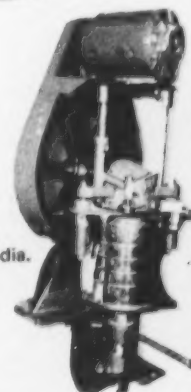
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SHELLFISH (cont. from p. 49)
catch has also declined. Last year, Japanese buyers claimed 50 percent of the pack, while this year roughly 25 percent went overseas. Domestically, retailers are dropping the expensive shellfish from their coolers, but demand from restaurant customers willing to pay for cost increases isn't likely to be satisfied.

Prospects for the season ahead are also dismal regarding supplies. The Bering Sea bust of '81 will continue into '82's season. ADF&G's suggested guideline harvest levels range from 33 million to 59 million pounds for the region, compared to 49 million pounds landed in 1981 and a record 141 million in 1980. Proposed guidelines for the Kodiak district project continued steady harvests of 11 million to 19 million pounds, compared to 23 million in 1981 and 20 million in 1980.

• Tanner crab is also suffering, not so much from lack of supply, but from lack of demand at the prices processors are forced to ask. With the season just beginning in Kodiak, the ex-vessel price had climbed to \$1.55 and was expected to go higher, while the negotiated price had been \$1.06 and one year ago was \$.65. Caught in the squeeze, one processor claimed he may have to shut down because the domestic market can barely sustain \$3.50 as a wholesale price FOB Seattle. "People will only pay so much for snow crab," warns a Chicago distributor. Even the Japanese temper their buying when the price hits \$3.50.

The ex-vessel price hikes are apparently due to an existing contract between a Japanese buyer and three or four processors in Kodiak. An escalation clause in the contract guarantees the same profit margin for the processor, compensating for ex-vessel price increases. For at least one of the floaters, that guarantee applied to only 50 percent of his production. Prices should come down once the Japanese contract is fulfilled.

Prior to the bulk of the season's landings in early March, demand for *bairdi* could not be met and pricing was flexible. But processors expected problems getting rid of their pack for the bulk of the season's run. A buyer for a major East Coast chain said his price limit is \$3.25 to \$3.30 for this year's crab. Inventories will compensate for lack of new product. Unfortunately, tanner crab cannot step in and fill demand for dwindling king crab supplies. King crab has gained a reputation on its own. Promotion efforts for snow crab are needed to broaden domestic markets.

As of March, tanner crab landings for the current season had reached 8.1
(continued on page 56)

Pacific Coast Dungeness Crab Landings

(POUNDS)

SEASON	ALASKA*	BRITISH COLUMBIA*	WASHINGTON	OREGON	CALIFORNIA	TOTAL
1960-61	4,591,000	4,284,000	7,388,000	10,816,000	12,446,000	39,525,000
1961-62	8,989,000	2,444,000	5,675,000	5,813,000	3,987,000	26,908,000
1962-63	12,084,000	3,738,000	5,105,000	3,546,000	2,342,000	26,815,000
1963-64	12,708,000	4,302,000	5,043,000	3,540,000	1,998,000	27,591,000
1964-65	8,895,000	3,501,000	7,715,000	6,221,000	4,749,000	31,081,000
1965-66	5,053,000	4,538,000	11,649,000	10,187,000	10,419,000	41,846,000
1966-67	11,597,000	5,295,000	9,291,000	9,428,000	10,705,000	46,316,000
1967-68	13,242,000	4,373,000	11,736,000	10,215,000	13,158,000	52,724,000
1968-69	11,304,000	3,705,000	19,250,000	11,965,000	13,685,000	59,909,000
1969-70	9,697,000	2,548,000	18,675,000	13,849,000	15,564,000	60,333,000
1970-71	3,749,000	1,963,000	13,211,000	14,735,000	8,501,000	42,159,000
1971-72	5,448,000	1,975,000	10,095,000	6,780,000	2,875,000	27,173,000
1972-73	6,423,000	2,580,000	5,583,000	3,143,000	1,500,000	19,229,000
1973-74	3,818,000	2,500,000	4,604,000	3,462,000	880,000	15,264,000
1974-75	3,034,000	2,513,000	5,896,000	3,335,000	1,816,000	16,594,000
1975-76	1,523,000	2,121,000	9,885,000	9,099,000	17,410,000	40,038,000
1976-77	1,181,000	2,269,000	14,023,000	16,200,000	26,404,000	60,077,000
1977-78	7,215,000	2,592,000	9,237,000	12,501,274	13,900,000	45,444,274
1978-79	6,374,932	3,634,396	7,979,403	16,500,000	8,236,142	42,724,873
1979-80	5,905,290	3,269,200	6,546,544	18,243,998	13,700,000	47,665,032
1980-81	14,901,177	3,379,200	2,905,786	9,526,969	11,865,000	42,578,132

*Latest calendar year.

Note: 1980-81 seasonal data are preliminary.

Source: State and provincial fisheries agencies.

Pacific Coast Shrimp Landings

(POUNDS)

YEAR	ALASKA	BRITISH COLUMBIA	WASHINGTON	OREGON	CALIFORNIA	TOTAL
1961	15,980,550	1,206,000	1,436,599	1,455,900	2,006,274	22,085,323
1962	16,943,120	1,663,000	1,367,441	2,750,400	1,786,289	24,510,250
1963	15,126,950	1,768,000	956,105	3,114,700	2,095,278	23,081,033
1964	7,726,750	1,052,000	314,130	5,477,400	980,608	15,550,888
1965	16,818,941	1,755,000	23,468	1,748,000	1,425,875	21,771,284
1966	28,192,621	1,682,000	282,947	4,751,300	1,213,959	36,122,827
1967	41,812,552	1,696,000	1,028,744	10,373,956	1,404,821	56,316,073
1968	42,077,104	1,568,000	1,163,864	10,163,864	2,223,205	58,008,431
1969	47,850,560	2,118,700	1,425,286	10,477,945	2,951,800	64,824,255
1970	74,256,326	1,537,800	925,000	13,735,000	4,044,640	94,498,766
1971	94,891,304	735,000	678,000	9,291,000	3,074,000	108,669,304
1972	83,830,064	794,000	1,582,000	20,900,000	2,500,000	109,606,064
1973	119,963,729	1,729,000	5,271,000	24,517,194	1,239,976	152,702,729
1974	108,741,434	2,644,000	9,300,000	19,968,000	2,380,000	143,013,434
1975	8,535,031	1,729,000	10,200,000	23,700,000	4,997,000	139,161,031
1976	129,011,047	8,470,000	9,224,898	25,300,000	3,470,000	175,475,945
1977	116,871,605	6,200,000	11,400,000	48,580,022	15,663,451	198,715,078
1978	73,292,614	3,100,000	12,298,000	56,666,109	13,163,243	158,519,966
1979	50,613,000	1,578,000	12,135,000	29,586,586	4,922,917	98,835,503
1980	51,574,692	1,443,200	12,743,221	30,152,030	4,242,754	100,155,897
1981	27,972,242	614,916	10,100,000	25,827,621	3,700,000	68,214,779

Note: 1980 Alaska statistics are preliminary. 1981 statistics are preliminary.

Sources: State & provincial fisheries agencies.



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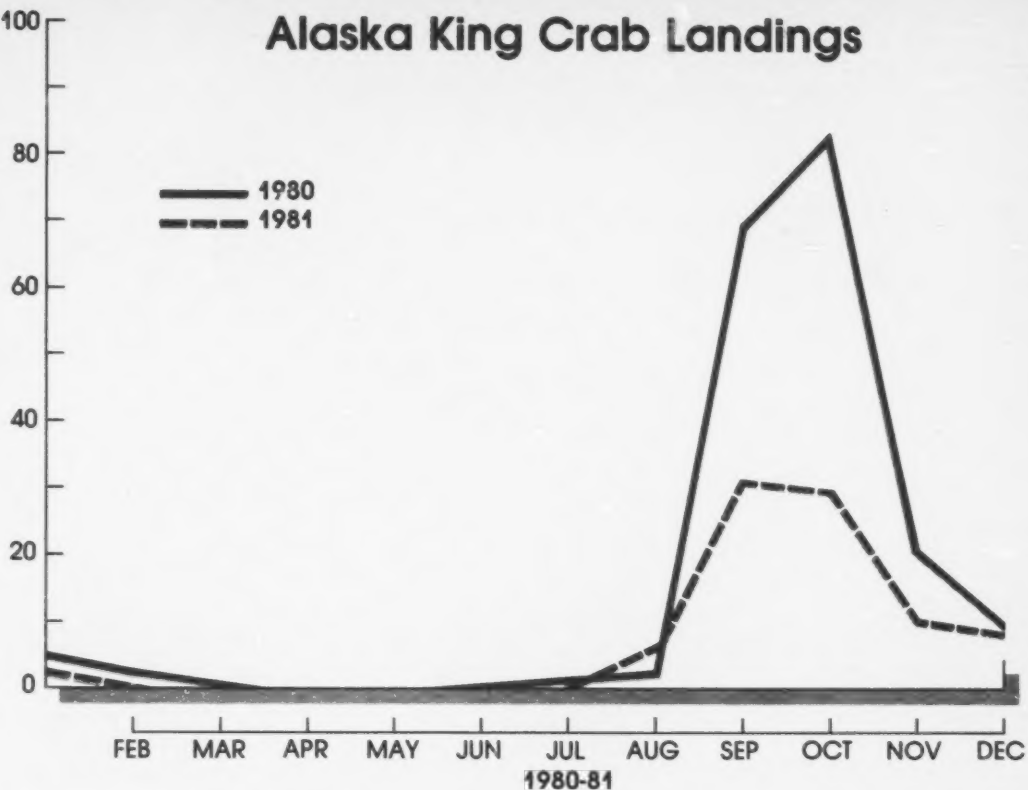
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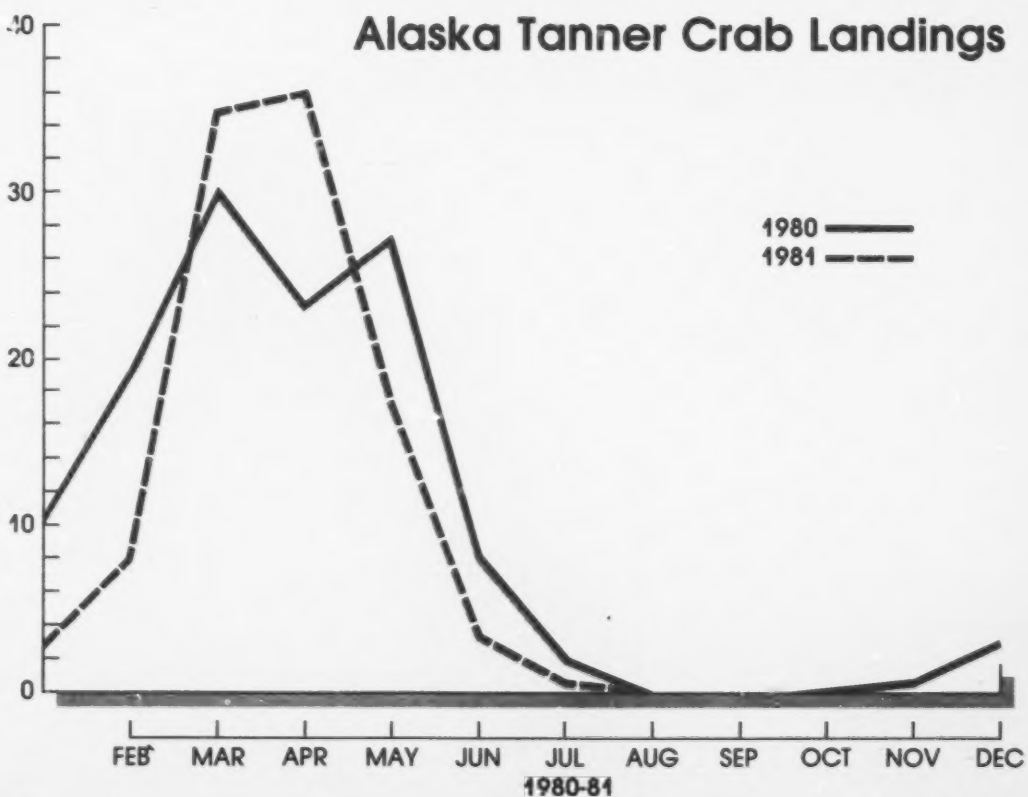
Alaska King Crab Landings



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Alaska Tanner Crab Landings



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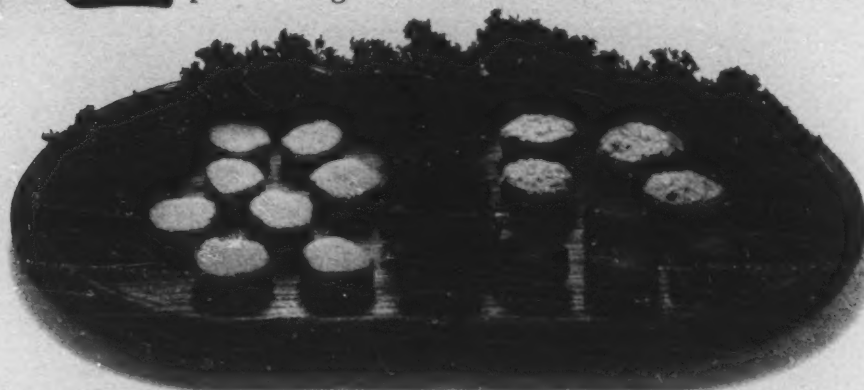
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SHELLFISH (cont. from p. 53)
million pounds, compared to 7.2 million pounds for the same period last year. Expected *bairdi* harvests for each region are as follows:

	(Million Pounds)	
	1982 Estimated Harvest	1981 Landings
Kodiak	13.5	11.8
South Peninsula	5.0	3.3
Chignik	3.0	2.6
Eastern Aleutians	0.5	—
Western Aleutians	3.4	0.2
Bering Sea	14.0	29.6

The *opilio* harvest, for which there is no quota, depends on the size the industry buys. At 110 mm the Bering Sea's projected harvest is 19 million

pounds, compared to landings of 50.4 million in 1981 and 39.3 million in 1980.

- Pacific shrimp fishermen are a diminishing breed, having faced several years of sharply declining stocks in Alaska and lowered prices up and down the coast. Ex-vessel prices in Oregon declined from an average of 60 cents per pound in 1980 to 43 to 50 cents per pound in 1981, accompanied by a drop in landings of 5 million pounds. Kodiak Alaska fishermen settled for 27 cents after a lengthy strike, down 2 cents from 1980. Wholesale prices for 6/5 lb IQF shrimp have moved to between \$3.10 and \$3.40 from the \$4.15-to-\$4.50 levels of a year ago.

Competition from Norwegian imports was not as severe this past year as in 1980. Volume was down and prices were comparable to those of domestic shrimp. However, the imports remained a factor in sluggish markets, as did high interest rates, stifling buying. Processors were stuck with expensive inventories well into the season.

The outlook for supplies does not improve the picture. Washington, Oregon and California production is expected to remain the same or decline slightly in the upcoming season. Projections for Alaska, where supplies in 1981 were half 1980 levels, show more depressed landings in 1982. The Kodiak district can expect landings of only 10 million pounds, down from 20 million in 1981. Another strike looms.

- Low landings of Dungeness crab for the lower Pacific states came as no surprise to fishermen or processors caught in a biological downswing of the species. Further declines are expected for California and Oregon, while Washington landings may have hit the bottom and could begin to rise late in 1982. December landings in the lower three states account for 80 percent of the season's production. Landings in millions of pounds for the month were:

	1981	1980
Washington	0.9	1.1
Oregon	2.6	5.7
California	5.0	7.0
TOTAL	8.5	13.8

In contrast, Alaska had a banner year for Dungeness partly because of increased effort. Landings during 1981 were 14.9 million pounds, as compared to 5.9 million pounds in 1980.

Because markets are limited to states west of the Rockies, prices have not compensated fishermen or processors participating in an expensive fishery. Promotion efforts underway introducing Dungeness to gourmet markets in the East may alleviate the low prices and create needed outlets for large supplies expected in a few years.

- The discovery of scallop stocks off of Oregon resulted in landings of over 15 million pounds in 1981, up from zero in 1980. The fishery is not expected to produce comparable quantities in 1982. Prices were high over the winter but will come down once the weather improves and landings commence. Competition from Georges Bank scallops will be intense. Those inventories have increased dramatically, and wholesale prices have fallen from \$3.75 to \$3.00 in two months.

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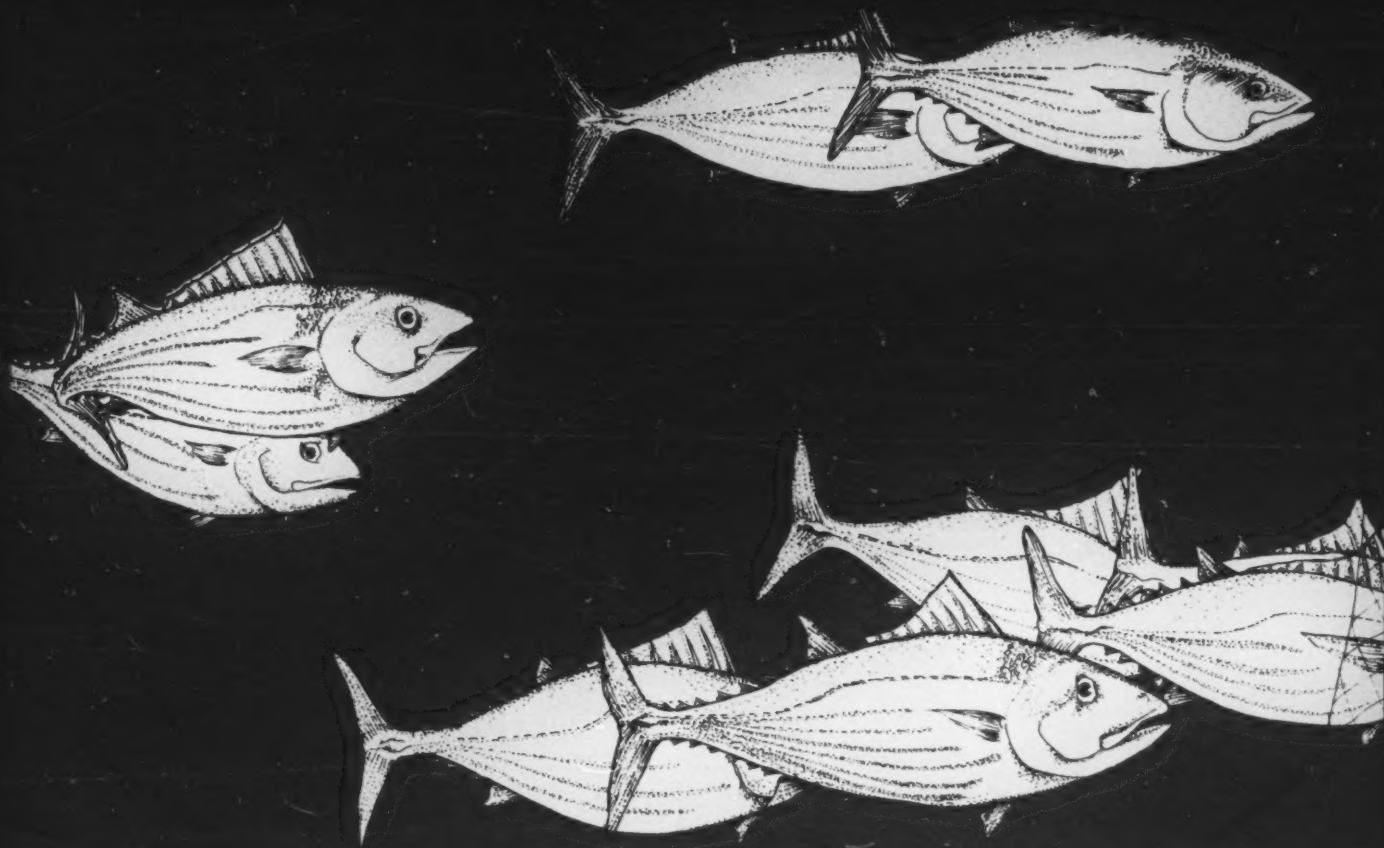
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TUNA: Sales Suffer

• High inventories, in spite of a decline in landings, indicate that Americans just haven't been buying as much tuna as usual the past 12 months.

Inventory figures are not made public, but it is generally conceded that there are at least as many — and in some warehouses more — cases of canned tuna in storage as in previous years, and discounts offered by packers indicate that they would like

to see them disappear.

Continental U.S. canneries produced an estimated pack of just over 14 million cases, close to 1980 levels. American Samoa, Puerto Rico and Hawaii combined receipts were up 13 percent for 1981 at 349,490 tons, but continental U.S. receipts were off 17 percent at 254,755 tons, for a combined total decline of almost 2 percent from 1980.

1981 United States Tuna Pack

(STANDARD CASES*)

REGION	ALBACORE	LIGHTMEAT	TOTAL
U.S. Continental	1,624,773	12,476,916	14,101,689
Puerto Rico, American Samoa and Hawaii	4,402,846	13,778,275	18,181,121
TOTALS	6,027,619	26,255,191	32,282,810

*48 halves per case.

Note: 1981 data are preliminary and estimated.

Source: NMFS

• Imports of frozen whole tuna were down 20 percent to 84,711 tons, due to a lack of demand by processors.

It appears that the fish are somewhat scarcer than in the past in the eastern tropical Pacific, where two years of virtually unregulated fishing may be starting to take a toll on the stocks, especially yellowfin.

That decline in fish stocks — combined with the fact that four American boats were seized last year by Mexican authorities, and with reports of an estimated 10 million tons of tuna on the loose in the central and western Pacific — has lured 17 California boats westward, compared with two or three in past years. And it looks like another 10 to 12 will go west before the year is out, according to the American Tunaboat Association. There vessels are contributing to the growth of landings in western waters and to the decline in continental landings.

• Several theories have been offered to explain the higher inventories. One is that salmon is competing more effectively in the marketplace. A very large 1981 pack and a new promotional effort by the Alaska salmon industry may be having an effect on tuna.

Another is that tuna prices have increased more rapidly than prices for chicken and hamburger, competitors

(continued on page 61)

United States Tuna Packs by Type Pack

(STANDARD CASES*)

YEAR	ALBACORE				LIGHTMEAT				TOTAL	YEAR
	Solid	Chunks	Grated & Flakes	Total	Solid	Chunks	Grated & Flakes	Total		
1950	1,540,822	513,020	—	2,053,842	2,601,993	4,201,704	—	6,803,697	8,857,539	1950
1951	1,033,902	529,851	—	1,563,753	1,880,053	4,550,290	—	6,430,343	7,994,096	1951
1952	1,349,796	760,531	483,630	2,593,957	1,489,387	3,144,693	1,265,597	5,899,677	8,493,634	1952
1953	1,477,659	713,096	499,880	2,690,635	1,476,053	3,392,672	1,124,732	5,993,457	8,684,092	1953
1954	1,422,269	425,826	447,594	2,295,689	1,791,514	4,805,510	1,234,157	7,831,181	10,128,870	1954
1955	1,654,775	336,913	433,727	2,425,415	1,401,015	4,374,343	868,641	6,643,999	9,069,414	1955
1956	1,887,438	454,134	328,976	2,670,548	1,574,651	6,505,454	965,926	9,046,031	11,716,579	1956
1957	2,155,104	899,310	491,228	3,545,642	1,316,312	5,391,053	906,552	7,613,917	11,159,559	1957
1958	1,984,746	468,340	415,286	2,868,372	1,332,399	7,742,364	1,272,614	10,347,377	13,215,749	1958
1959	2,185,877	449,266	460,491	3,095,634	1,201,786	8,131,658	1,101,115	10,434,559	13,530,193	1959
1960	2,571,359	1,010,772	494,332	4,076,463	986,153	9,134,416	1,108,402	11,228,971	15,305,434	1960
1961	2,575,010	844,514	471,907	3,891,431	1,094,750	9,678,056	1,103,467	11,876,273	15,767,704	1961
1962	2,755,045	1,428,438	601,071	4,784,554	1,433,216	9,614,491	1,185,667	12,233,374	17,017,928	1962
1963	3,537,068	1,060,232	668,871	5,266,171	645,622	9,712,549	931,478	11,289,649	16,555,820	1963
1964	3,517,340	1,963,501	501,425	5,982,266	1,002,068	9,952,429	752,240	11,706,737	17,689,003	1964
1965	3,650,549	1,985,700	524,687	6,160,936	1,196,272	10,071,458	670,138	11,937,868	18,098,804	1965
1966	3,739,290	2,304,662	530,131	6,574,083	1,084,757	11,449,794	844,933	13,379,484	19,953,567	1966
1967	3,980,476	2,183,351	528,230	6,692,057	868,959	11,167,976	952,644	12,989,579	19,681,636	1967
1968	3,704,454	2,366,488	468,997	6,539,939	1,266,587	11,522,250	682,914	13,471,751	20,011,690	1968
1969	4,261,305	1,928,561	535,468	6,725,334	1,235,113	11,531,740	605,452	13,372,305	20,097,639	1969
1970	4,696,060	1,873,744	424,515	6,994,319	1,535,639	12,662,957	870,425	15,069,021	22,063,340	1970
1971	4,017,897	2,311,862	423,276	6,753,035	1,070,624	13,545,365	835,949	15,451,938	22,204,973	1971
1972	6,811,418	2,251,978	465,710	9,529,106	2,012,981	18,775,190	892,825	21,680,996	31,210,102	1972
1973	6,389,185	1,825,834	539,032	8,754,051	1,734,791	20,558,426	1,058,323	23,351,540	32,105,591	1973
1974	6,329,053	1,348,817	484,456	8,162,326	1,810,202	22,235,539	1,155,866	25,201,607	33,363,933	1974
1975	3,894,434	884,482	234,653	5,013,569	1,335,316	19,971,267	481,499	21,788,082	26,801,651	1975
1976	4,757,090	950,468	258,115	5,965,673	1,495,922	22,350,310	492,584	24,338,816	30,304,489	1976
1977	4,615,000	1,390,000	216,000	6,221,000	1,664,000	19,468,000	307,000	21,439,000	27,660,000	1977
1978	5,578,916	1,265,543	275,754	7,120,213	1,690,372	26,435,590	388,966	28,514,928	35,635,141	1978
1979	4,493,388	1,033,292	278,242	5,804,922	1,341,195	23,976,226	300,138	25,597,559	31,402,481	1979
1980	4,350,105	965,372	189,948	5,505,425	784,227	24,032,002	187,068	25,003,297	30,508,722	1980
1981	NA	NA	NA	6,027,619	NA	NA	NA	26,255,191	32,282,810	1981

*48 halves per case.

Note: 1981 data are preliminary and estimated.

Source: NMFS

Continental Landings of Domestic Caught Tuna

(SHORT TONS)

YEAR	TRIPS	ALBACORE	BLUEFIN	SKIPJACK	YELLOWFIN*	BONITO	TOTAL	YEAR
1961	662	13,610	9,909	38,861	98,525	3,463	162,418	1961
1962	552	16,629	15,261	46,699	62,296	804	141,689	1962
1963	576	21,491	14,702	48,209	54,807	1,633	140,842	1963
1964	531	18,694	11,531	32,922	73,608	774	137,429	1964
1965	594	10,775	7,664	42,106	78,151	1,929	140,625	1965
1966	579	10,944	17,010	25,434	65,991	6,647	126,026	1966
1967	617	12,127	6,468	54,987	70,296	9,033	152,911	1967
1968	522	14,105	6,206	29,606	76,205	6,079	132,201	1968
1969	623	11,813	7,234	22,801	101,478	7,283	150,609	1969
1970	668	17,361	4,092	38,049	115,632	3,670	178,804	1970
1971	591	15,541	8,496	50,338	80,236	9,922	164,533	1971
1972	634	17,498	12,459	18,006	118,283	11,476	177,722	1972
1973	532	11,679	9,827	14,796	116,988	14,084	167,374	1973
1974	546	20,457	5,496	29,994	123,231	7,661	186,839	1974
1975	515	18,043	7,559	36,852	117,100	15,743	195,297	1975
1976	577	17,145	9,658	64,623	141,471	3,912	236,809	1976
1977	470	11,693	3,312	40,727	99,995	10,904	166,631	1977
1978	507	16,691	4,802	70,970	101,730	3,457	197,650	1978
1979	528	6,913	6,123	56,760	105,604	1,810	177,210	1979
1980	447	7,691	2,355	87,283	96,256	6,487	200,072	1980
1981	372	14,108	809	63,304	84,713	7,110	170,044	1981

*Includes bigeye and blackfin.

Note: Data prior to 1976 is for California only.

Source: NMFS

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**PAN-ALASKA
BUMBLE BEE**



Circle number 19 on the Reader Inquiry Card



TUNA (cont. from p. 58)

for a spot in the shopping cart. But major-brand canned tuna, which increased in price by as much as 30 percent in 1980, held almost steady in 1981 and in some instances declined slightly. For example, a standard case of solid white in water, which started in 1980 at \$45 and ended the year at \$60, was still being offered a year later in the \$56-\$65 range. Branded chunk light, which climbed from \$37 to \$43 in 1980, was back down to \$39 at the end of 1981. Promotional discounts lower these prices by \$6 to as much as \$14 per case.

However, according to National Marine Fisheries Service economists, competition with meat and poultry prices is a less important factor in tuna demand than is the general state of the national economy. Since early 1980, the nation technically has slipped into a recession twice, and one NMFS economist says soft demand for tuna is "normal in a recession."

Not every company is feeling the pinch, however. Bumble Bee has "adequate" inventories, says Bob Chapman, general manager in San Diego, but no surplus of product. Bumble Bee is reported to be the only major tuna packer to post a sales gain in 1981.

• Intense competition, marked by advertising campaigns and promotional case-price discounts, continues to characterize the market. Unless the national economy improves in the coming months, the competition may become even more intense in response to interest rates and new pressures from the fleet:

*Vessel owners have not seen a price increase since November 1979, when the current price of \$1,200 a ton for yellowfin and \$1,100 for skipjack was set. The American Tuna Sales Association is negotiating on behalf of vessel owners, who have shouldered hefty operating cost increases during that period. This effort comes despite the fact that canners got an interim agreement allowing them to pay \$60 per ton less for fish that don't meet certain quality criteria. This winter that price was paid for fish if they: (1) had a salt content greater than 2.5 percent, (2) were not floated out of the holds, or (3) came off the boat at a temperature greater than 14 degrees F.

*Besides increased price demands, processors may face a greater supply than the one last year, which often resulted in vessels lying at dockside for two to three weeks waiting to unload. New vessel construction worldwide will add entrants to the fishery in the next two years. Mexico alone intends to add 40 boats to her fleet this year.

(continued on page 64)

United States Tuna and Bonito Packs

(STANDARD CASES ★)

YEAR	ALBACORE	LIGHTMEAT	BONITO	TOTAL
1950	2,053,842	6,803,697	71,943	8,929,482
1951	1,563,753	6,430,343	105,451	8,099,547
1952	2,593,957	5,899,677	227,000	8,720,634
1953	2,690,635	5,993,457	172,967	8,427,059
1954	2,295,689	7,831,181	78,049	10,204,919
1955	2,425,415	6,643,999	4,815	9,074,229
1956	2,670,548	9,046,031	6,859	11,723,438
1957	3,545,642	7,613,917	12,079	11,171,638
1958	2,868,372	10,347,377	111,371	13,327,120
1959	3,095,634	10,434,559	57,505	13,587,698
1960	4,076,463	11,228,971	14,423	15,319,857
1961	3,891,431	11,876,273	159,065	15,926,769
1962	4,784,554	12,233,374	31,935	17,049,863
1963	5,266,171	11,289,649	71,541	16,627,361
1964	5,982,266	11,706,737	24,674	17,713,677
1965	6,160,936	11,937,868	48,253	18,147,057
1966	6,574,083	13,379,484	229,014	20,182,581
1967	6,692,057	12,989,579	311,346	19,992,982
1968	6,539,939	13,471,751	214,716	20,226,406
1969	6,725,334	13,372,305	252,548	20,350,187
1970	6,994,319	15,069,021	139,541	22,202,881
1971	6,753,035	15,451,938	285,027	22,490,000
1972	9,529,106	21,680,996	336,795	31,546,897
1973	8,754,051	23,351,540	534,309	32,639,900
1974	8,162,326	25,201,607	393,522	33,757,455
1975	5,013,569	21,788,082	660,537	27,462,188
1976	5,965,673	24,338,816	163,355	30,467,844
1977	6,329,165	22,177,082	471,196	28,977,443
1978	7,120,213	28,514,988	180,429	35,815,630
1979	5,804,922	25,597,559	75,533	31,478,014
1980	5,505,425	25,003,297	224,193	30,732,915
1981	6,027,619	26,255,191	347,864	32,630,674

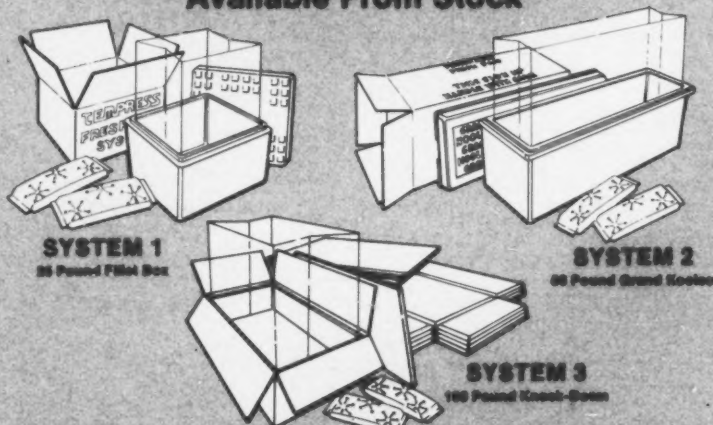
★ 48 halves per case.

Note: 1981 data are preliminary and estimated.

Source: NMFS

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Tuna Prices Paid Fishermen

(DOLLARS)

YEAR	ALBACORE	YELLOWFIN	BLUEFIN	SKIPJACK
1950	400	310	300	290
1951	400-250-300	310	300	290
1952	350	320	310	280
1953	400	320	310	280
1954	400-410	350-330	340-320	320-290
1955	350-310-330	330-270	320-210	290-230
1956	375-300	270	280-260	230
1957	310-280-300	270-230-270*	260-200-260	230-190-230
1958	425	275-283-263	260	235-252-223
1959	435-400	270-240-253	260-240	230-200-217
1960	325-375	250	250	210
1961	325-375	240-290	220-280	210-260
1962	200-310	300-290	280-250	260-250
1963	275-325	290-240	250-220	250-200-210
1964	300-325	245-270	240	200
1965	300-325	245-336	240-267	200-286
1966	375-390	315-480	290-311	260-392
1967	390-400	265-358	235-280	205-293
1968	425	307-318-315	292-298-295	257-268-265
1969	450	321-332	210-309	271-284
1970	550	346-397	326-377	396-347
1971	630	411-425-421	391-405-403	261-376
1972	680	442-445	422-425	405-408
1973	830	477-501	457-481	447-471
1974	820	575	555	535-545
1975	675	580-500	480	540-450
1976	675-1000	580-630	560-595	513-590
1977	1,165	665-840	645-620	620-790
1978	1,165	790-840	820	690-790
1979	1,390	810-950	930	545-850
1980	1,635	1,100-1,200	1,180	800-1,100
1981		1,100-1,200		1,000-1,100

Note: Prices quoted are per short ton of round fish in good condition landed at canner dock.
Source: NMFS

United States Tuna Packs

(STANDARD CASES*)

YEAR	CALIFORNIA	OREGON AND WASHINGTON	HAWAII, PUERTO RICO, AM. SAMOA, MARYLAND	TOTAL
1960	10,714,911	1,473,540	3,116,983	15,305,434
1961	10,545,568	1,261,666	3,960,470	15,767,704
1962	10,511,164	1,471,189	5,035,575	17,017,928
1963	9,074,754	1,487,036	5,994,030	16,555,820
1964	9,292,629	1,503,283	6,893,091	17,689,003
1965	9,012,710	1,760,757	7,325,337	18,098,804
1966	9,613,331	1,540,670	8,799,566	19,953,567
1967	8,962,412	1,508,537	9,210,687	19,681,636
1968	9,042,920	1,778,382	9,190,388	20,011,690
1969	8,990,094	1,656,951	9,450,594	20,097,639
1970	10,567,515	1,588,905	9,906,920	22,063,340
1971	9,735,943	1,422,117	11,046,913	22,204,973
1972	13,011,296	1,887,008	16,311,798	31,210,102
1973	13,920,431	1,687,610	16,497,550	32,105,591
1974	14,331,606	1,862,093	17,170,234	33,363,933

YEAR	CONTINENTAL	HAWAII, PUERTO RICO AMERICAN SAMOA	TOTAL	YEAR
1975	13,025,544	13,776,107	26,801,651	1975
1976	15,921,290	14,383,199	30,304,489	1976
1977	12,605,000	15,054,907	27,660,237	1977
1978	16,591,000	19,989,132	35,580,132	1978
1979	14,222,000	17,559,000	31,781,000	1979
1980	14,287,759	16,220,963	30,508,722	1980
1981	14,101,689	18,181,121	32,282,810	1981

*48 halves per case.

Note: 1975 begins new reporting system and is comparable only in totals for year. 1981 data are preliminary and estimated.

Source: NMFS

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North Pacific Albacore Landings

(POUNDS)

YEAR	OREGON	WASHINGTON	CALIFORNIA	TOTAL	YEAR
1961	3,251,000	456,000	29,123,000	32,830,000	1961
1962	8,936,000	365,000	36,622,000	45,923,000	1962
1963	11,413,000	527,000	48,860,000	60,800,000	1963
1964	4,452,000	1,055,000	42,551,000	48,058,000	1964
1965	12,122,000	2,048,000	23,218,000	37,388,000	1965
1966	18,041,000	1,101,000	18,189,000	37,331,000	1966
1967	29,243,000	1,240,000	17,858,000	48,341,000	1967
1968	37,752,000	3,050,000	15,077,000	55,879,000	1968
1969	29,828,000	3,561,000	14,722,000	48,111,000	1969
1970	21,779,000	4,390,000	29,932,000	56,101,000	1970
1971	8,420,000	5,250,000	36,082,000	49,752,000	1971
1972	23,056,000	16,238,000	8,458,000	39,254,000	1972
1973	16,349,895	10,200,000	1,064,000	27,613,895	1973
1974	25,225,000	17,983,000	11,700,000	54,908,000	1974
1975	15,558,000	15,060,000	8,304,000	38,922,000	1975
1976	5,933,612	7,202,000	27,759,376	40,894,944	1976
1977	4,425,000	4,948,000	15,000,000	24,373,000	1977
1978	11,248,342	5,008,000	21,000,000	37,256,342	1978
1979	3,105,381	861,978	8,000,000	11,967,359	1979
1980	3,504,715	1,292,068	9,500,000	14,296,783	1980
1981	7,727,168	1,927,968	17,500,000*	27,155,136	1981

*Through October.

Note: 1981 data preliminary

Source: State Fisheries Agencies

Continental Imports of Frozen Tuna

(SHORT TONS)

YEAR	ALBACORE	BLUEFIN	SKIPJACK	YELLOWFIN	TOTAL
1961	15,602	639	5,172	30,572	61,985
1962	16,084	725	2,397	45,325	64,531
1963	8,488	1,179	4,674	24,720	39,061
1964	16,716	1,839	3,208	26,937	48,700
1965	22,189	415	2,858	19,686	45,148
1966	24,412	1,576	7,215	30,531	63,734
1967	21,749	1	2,170	13,332	37,252
1968	23,725	40	771	30,161	54,697
1969	22,829	185	1,449	18,241	42,704
1970	15,656	435	10,977	15,337	42,405
1971	12,986	1,292	26,209	9,633	50,120
1972	31,222	2,780	42,642	18,286	94,930
1973	24,376	3,663	89,199	23,386	140,624
1974	24,819	576	79,988	10,314	115,697
1975	7,066	802	21,351	13,549	42,768
1976	34,808	891	40,960	16,318	92,977
1977	8,810	1,085	64,223	20,110	94,228
1978	15,503	221	72,279	37,314	125,317
1979	13,312	54	68,490	24,737	106,593
1980	11,485	—	77,413	16,280	105,178
1981	14,600	—	50,763	19,348	84,711

Note: Data prior to 1976 is for California only.

Source: NMFS

Puerto Rico Tuna Deliveries

(SHORT TONS)

YEAR	ALBACORE	BLUEFIN	SKIPJACK	YELLOWFIN*	TOTAL
1964	29,819	2,161	27,304	32,583	91,867
1965	26,540	1,173	41,913	24,037	93,663
1966	30,638	643	41,283	40,459	113,023
1967	26,863	680	60,828	32,065	120,436
1968	25,059	—	44,976	56,625	126,660
1969	35,759	—	36,900	52,256	124,915
1970	41,780	244	30,738	52,716	125,478
1971	41,451	929	77,784	48,786	168,950
1972	62,279	756	73,619	92,507	229,161
1973	55,229	110	85,323	94,362	235,024
1974	53,861	159	140,291	82,756	277,067
1975	28,393	380	100,463	90,796	220,032
1976	47,254	154	109,043	93,910	250,361
1977	48,488	217	95,061	86,569	230,335
1978	64,436	278	156,295	67,362	288,371
1979	52,075	555	117,401	62,923	232,954
1980	46,165	62	120,857	57,017	224,101
1981	43,761	—	129,769	70,345	243,875

*Includes bigeye and blackfin.

Source: NMFS

TUNA (cont. from p. 61)

*Unregulated fishing in the eastern Pacific has resulted in some vessels' not delivering their fish before the holidays, so that while 1981 receipts were down slightly, January receipts this year were four and a half times those of January last year.

*While the American tuna industry continues to have its differences with Mexico, relations with Peru, Ecuador and Costa Rica have stabilized and no American boats were seized by those countries last year. If agreements can be worked out and embargoes lifted — as the embargo against Costa Rica recently was — American vessels could get back into production in those waters and raw tuna might again be imported from those countries.

*Ever-increasing numbers of U.S. boats heading for the more productive waters of the western Pacific are sure to boost landings there, both of the light meat species and albacore. While light meat production at offshore ports was up by 18 percent last year, albacore landings in American Samoa and Hawaii topped those of 1980 by 42 percent.

*Despite a growing demand in Europe, prices there are depressed and the apparent cause is heavy exports by Mexico. In 1979, the last full year of production before the embargo, Mexico exported 27,600 tons of raw fish to U.S. canners. In 1981, Mexican fishermen landed 72,000 tons of tuna, and an estimated 1.2 million cases of canned product are in warehouses there.

U.S. companies continue to focus their sales efforts on the domestic market, and competition is expected to remain keen throughout this year. Star-Kist Foods, selling tuna under its own and the Breast o' Chicken labels, holds the lead in the domestic market with about 32.3 percent of the sales. Van Camp's Chicken of the Sea label is second with 28.2 percent, and Bumble Bee holds third place with 14 percent of the market. Private labels comprise 17.9 percent of the sales.

CHB, which operates Pan Pacific, is a major market contender, although most of its tuna is sold under private labels. Neptune also markets under private labels. Mitsubishi Corporation, a newcomer to the industry, has not yet announced sales figures.

As to the immediate future for the market, predictions are for an improvement, but the timing will likely depend on the economy.

Says one company sales executive, it's all cyclical, and "it could turn around in three months."

— Terry Johnson

Continental Imports of Frozen Tuna by Country of Origin

(SHORT TONS)

COUNTRY	ALBACORE		SKIPJACK		YELLOWFIN*		TOTAL	
	1980	1981	1980	1981	1980	1981	1980	1981
American Samoa	—	252	—	—	—	—	—	252
Canada	73	—	—	—	—	—	73	—
Chile	5	23	—	—	—	—	5	23
Fiji Islands	2,048	926	—	—	760	382	2,808	1,308
Guam	—	—	1,280	1,846	245	378	1,525	2,224
Indonesia	—	—	4,811	4,979	652	271	5,463	5,250
Japan	3,955	5,619	34,498	8,475	2,960	3,107	41,413	17,201
Malaysia	106	135	—	—	—	—	106	135
Maldiv Islands	—	—	536	922	183	115	719	1,037
Mexico	—	—	5,681	—	5,602	—	11,283	—
Nauru	—	—	—	134	—	134	—	268
New Guinea	—	—	233	1,926	102	574	335	2,500
New Zealand	1,402	2,128	987	804	129	—	2,518	2,932
Palau Island	—	—	333	5,668	67	2,190	400	7,858
Papua	—	—	1,295	3,697	193	678	1,488	4,375
Philippines	37	—	17,874	12,394	4,301	8,384	22,212	20,778
Singapore	3,445	3,288	4,963	6,642	402	1,139	8,810	11,069
Solomon Islands	—	—	4,436	365	—	158	4,436	523
South Korea	414	1,280	465	2,911	461	1,694	1,340	5,885
Taiwan	—	949	21	—	223	144	244	1,093
TOTAL (as received)	11,485	14,600	77,413	50,763	10,280	19,346	105,178	84,711
TOTAL (rnd. wt. basis)**	12,104	15,723	77,722	50,803	16,732	19,861	106,558	86,387

*Includes bigeye tuna.

**Converted to round weight by using factors of 1.11 for gilled and gutted, 1.25 for dressed, heads-off, 2.00 for raw fillets, and 2.25 for cooked loins.

Note: Cumulative and comparative import data reported by the U.S. Customs Service. Data reflect the origin of shipments and not necessarily the flag of the catcher vessel.

Source: NMFS

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The "superfish" may sound like a retailer's pipedream. It's not; "superfish" is here. It is previously frozen, chilled fish supplemented by fresh fish in a highly controlled program that offers the retailer and the consumer the best of both worlds — without deceiving the consumer.

In one of the following three stories you will read about G.J. Coles & Coy, an Australian supermarket chain which is in its sixth year of marketing previously frozen, chilled fish in a highly successful program. Last year, chilled fish sales were expected to reach \$12 million.

Closer to home, Hudson Seafoods, Inc., of North Carolina, has embarked on a

similar program, which we cover in a second story.

A third story by Tyre Lanier and Reino Korhonen of North Carolina State University tells how to set up a chilled program and reports on research that proves the American consumer will enthusiastically accept previously frozen, chilled fish in a properly designed program.

By Tyre Lanier and Reino Korhonen

Consumer acceptance and technical feasibility of a previously frozen, thawed product may overcome several obstacles faced by retailers dealing with highly fluctuating supplies and prices of fresh fish.

Lack of a guaranteed and price-stable supply limits the range of species that can be offered at any given time, hinders advance advertising, and results in poor price competition with meat and poultry. Integration of previously frozen fish into a chilled fish program offers the packer the ability to inventory, improve his selection, and stabilize prices. Simultaneously, he can continue to supply unfrozen product when available, perhaps at a price differential to the thawed product, which would be sold when strict-

ly fresh fish is either unavailable or priced uncompetitively.

In designing the handling and marketing procedures during testing of a chilled fish program, several guidelines were established:

- 1) The program should not be an effort to deceive consumers. All previously frozen product should be labeled as such. However, such labeling need not imply lower quality by being overemphasized in the label design.

- 2) The previously frozen products' quality should have consumer acceptability equal to or greater than that of available fresh products.

- 3) The products marketed in the program should consist solely of pre-packaged fresh and previously frozen

fish, preferably in fillet form. In no case should the product be placed in the retail case in a frozen condition, or allowed to freeze while on display. In particular, refreezing the product for sale in the frozen foods case would not be acceptable. All of these practices are known to destroy consumer confidence and sales appeal of the chilled product.

Drawing upon considerable laboratory experimentation and some related industrial experiences, we believe previously frozen fish may be successfully integrated into a chilled fish program according to one of two basic schemes: freezing in bulk and repackaging for retail after thawing (figure 1) or freezing a retail package

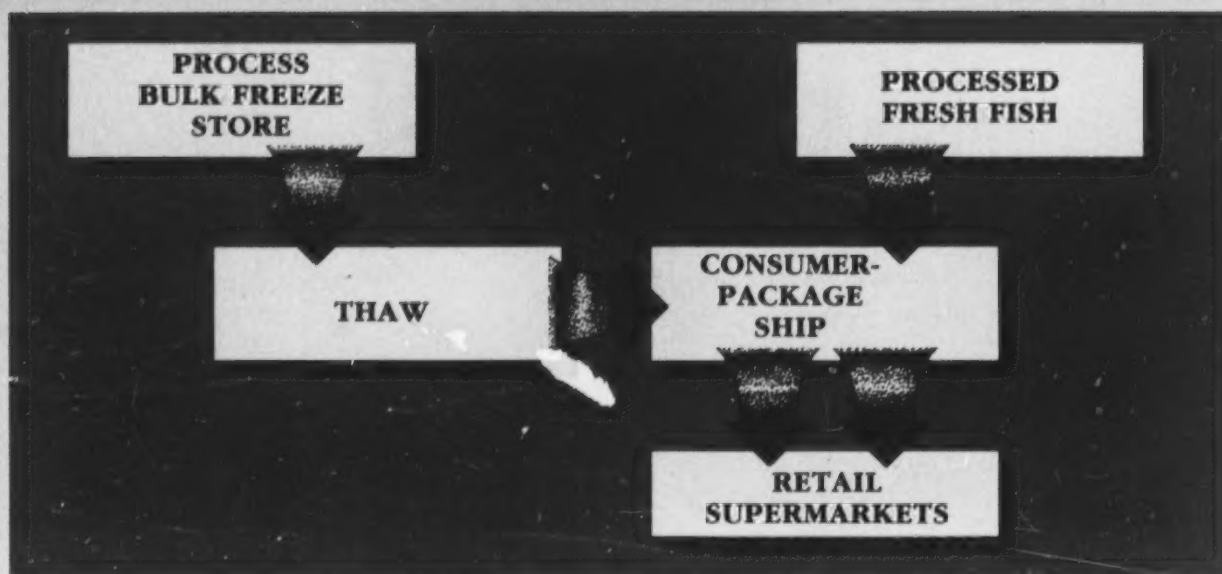


FIGURE 1. Bulk freezing, thawing, and repacking into retail packages.

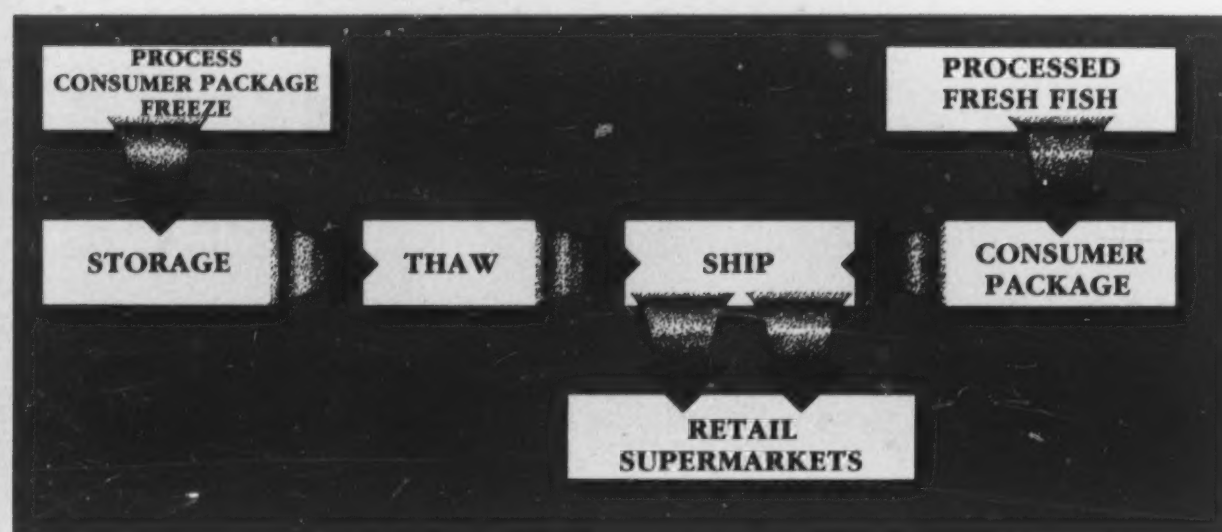


FIGURE 2. Freezing, thawing, and sale in the same retail package.

which is subsequently thawed (figure 2).

The bulk freezing method has proved to be an economically viable method of conducting a chilled fish program for a major retail chain in Australia (see related story—ed.). While it involves an additional packaging step, bulk freezing requires less freezer storage space and also avoids many technical problems encountered by trying to freeze, thaw, and market the product in the same package. Such problems include:

(a) **Accumulation of thaw drip in the package:** This is not a major problem with the bulk freezing method if the fish are fully thawed prior to repackaging. If phosphates are used to limit the thaw drip, the fish may have

a slick surface coating, which results from higher phosphate treatment levels; but this is easily rinsed off fish handled by the bulk method prior to repackaging.

(b) **Freezer burn and associated oxidative deterioration during frozen storage:** Fish frozen in bulk may be adequately protected against freezer burn by tight contact of the fish surfaces within the block and a tight protective wrapping or glaze around the exterior of the block. Most retail packages, with the exception of a vacuum package, have considerable air space which may allow moisture migration out of the product and oxidative quality deterioration. Assuming that the package could be designed to absorb the additional moisture,

glazing the fish prior to packaging and freezing would help to alleviate this problem.

(c) **Adaptability to modified atmosphere packaging:** With the bulk freezing method, thawed and fresh fish can be packaged identically with the same equipment, which would incorporate a gas flush containing carbon dioxide for extended shelf life. Flushing retail packages prior to freezing would be of little value since the available packaging films are not impermeable to carbon dioxide over such an extended frozen storage period.

Freezing and thawing the product in the retail package has one positive advantage. It facilitates processing and
(continued on page 70)

It Works!

"We heartily recommend marketers in your country to follow our approach, as it is good for both consumers and retailers."

Lawrence Watson, G.J. Coles & Coy

In Australia, where seafood retailers face problems similar to our own, a major retail chain has successfully established a nationally branded range of previously frozen, thawed seafood products. Like the United States, Australia imports a large portion of its bottomfish supply in frozen block form, while local landings serve coastal, fresh markets. Per capita seafood consumption barely matches that in the United States for this country of beef eaters. Like our Midwest, inland and country areas of Australia do not get their share of seafood.

"Fresh fish is still unreliable regarding continuity," says G.A. Burton, G.J. Coles & Coy's Group Controller of the Perishable Grocery Department, "whereas frozen fish not only solves this problem, but also gives us a stabilized price structure." Sales of previously frozen, thawed fish at Coles

were expected to reach \$12 million in 1981. The company, based in Melbourne, is Australia's largest retailer, claiming one-quarter of the nation's food business.

More than 300 supermarkets in all five states carry the Farmland product, a line of 25 species, at least 15 of which are on sale at any given time. Marketing efforts began in February 1977. Currently 95 percent of chilled fish sales are from fish originally frozen and thawed. "Quality and freshness have always been paramount," says Lawrence Watson of Coles & Coy, "and the thawed-from-



At G.J. Coles & Coy, Australia's largest retailer, Farmland chilled fish sales are booming. Blocks of frozen fish are thawed and packaged for consumers, bearing the label, "prepared from quality frozen fish."

frozen product is probably of higher quality than fresh fish which may have spent days passing through a traditional market system. We heartily recommend marketers in your country to follow our approach, as it is good for both consumers and retailers."

A unique relationship with the chain's supplier was established to introduce the chilled range. Independent suppliers were persuaded to set up fish processing, packing and distribution systems in each capital city. Six plants were established, almost exclusively for production of Farmland chilled fish, while no contracts existed between Coles and its suppliers.

Suppliers purchase frozen blocks largely from New Zealand, Japanese, and South African exporters. The blocks are water-thawed to near the point of complete defrost, drained and packed for retail on

polystyrene foam trays. An absorbent pad on each tray takes care of drip loss. Depending on the origin of the supply, product may be phosphate-treated prior to initial freezing, but thawed fillets are never dipped.

P.V.C. film is used to overwrap product, which is weighed, priced and labeled with the Farmland brand. Australian regulations require that chilled fresh fish be identified differently from frozen fish thawed and sold fresh. Previously frozen product is labeled "prepared from quality frozen fish" to cover this requirement.

(continued on page 71)

Another Approach

Jim Hudson refuses to sell a strictly fresh fish. After five years of research and \$2 million in expenditures he has introduced a deep chill tray pack to the Atlantic seaboard.

Prepackaged labeled trays of up to 40 different species are distributed frozen to chain store retailers where they are slacked before being displayed in a store's fresh case.

"We don't object to the fact that the consumer knows the product has been frozen," says Hudson. "They will find that our product has the consistency of quality."

Market research has proven to Hudson that he can sell more volume by slacking the product prior to its display in the fresh case. "We cater primarily to the two-person family. In this day and time so many couples are working and they don't want something they have to thaw out themselves. They want something they can cook the same day they buy it."

Hudson's concept of a deep chill tray pack materialized at Zebulon, North Carolina, chosen because of an existing cold storage facility with 182,000 cubic feet capacity and for an adequate labor source in the area. Product is brought in by truck from buying stations on the Gulf and Atlantic coasts.

The production program entails a combination of procedures resulting from three years of lab research. Each fish is filleted or dressed, then dipped twice in a solution designed to prevent drip loss. Drained fillets or fish are IQF frozen and lightly glazed for protection against rancidity and freezer burn. Blue trays lined with a heavy duty pad are packed with approximately one pound of product. The trays are overwrapped, weighed and labeled "Captain Jim Seafoods." Hudson will not accept private labels.

The overwrap is not relied upon for total protection. The packages are loaded into a master bag with a master box and a vacuum is pulled. Temperatures inside the processing facility are maintained as close to 40 degrees F as possible to ensure a constantly chilled product.

Boxes are held in cold storage at minus 10

degrees F and trucked to distribution warehouses for retail chain stores. The product is slacked overnight under 33- to 34-degree refrigeration either at the warehouse or after reaching the retail outlet. "If not slacked properly," says Hudson, "consumer resistance is created."



Prepackaged, frozen, and thawed before display — Hudson's approach.

One advantage of slacking at store level is the ability to slack as the product is sold. A retailer thus eliminates perishables. Captain Jim Seafoods are given three and a half days to be sold before being pulled.

The product is priced consistently less than fresh fish on the market but higher than frozen products. Major chain retailers in 15 states between New York and Georgia buy Hudson's deep chill tray packs.

Hudson sees the Midwest as the largest untapped market source. "If we are successful here where supplies are readily available and the market is extremely competitive, maybe we can ship to the Midwest. We must always be looking for new markets," believes Hudson.

Not all chain stores have accepted the deep chill tray pack. Hudson does not recommend that a processor embark on such a program without considerable market research. "Until consumers demand consistently high quality seafood, the average retail chain store is going to be reluctant to carry the product," he says. "The only thing that is going to change this reluctance is consumer demand."

— N.H.H.



FIGURE 3. Labels used on prepackaged fish by Australian supermarket chain of G.J. Coles and Coy, and in NCSU chilled fish marketing study for two stores.



FIGURE 4. Labels used in NCSU chilled fish marketing study for two stores.

(CHILLED FISH cont. from p. 67)
handling of product on the critical first day of the week when most fish must be shipped out for distribution to retail stores. Commercial continuous-throughput microwave equipment might be used to temper packaged fish to just below the melting temperature prior to shipping. The fish would then pass through the latent heat melting stage during transport and holding, thereby ensuring low temperature maintenance and top quality in the retail product. The total tempering time with currently available microwave tempering units is less than 10 minutes, as compared with overnight or longer for air-thawing of packages.

Vacuum-packaged fish can be safely water thawed or tempered in a

matter of hours while still packaged. Vacuum-packaged, water-thawed fish have been found in this laboratory to maintain quality approximately equal to that of fish handled strictly fresh, using identical packaging methods. Because of rancidity development, some untreated fish may be stored only three to four months prior to thawing and selling. Rancidity development will vary depending on the fish's fat content and how it is prepared, i.e., belly flaps removed or present. Various antioxidant treatments are being tested to extend the storage period.

Since the technical problems associated with incorporating previously frozen fish into a processor's chilled fish program will be relatively minor, the question remains, "Will the

consumer buy previously frozen fish, so labeled?" The Australian retail food chain of G.J. Coles and Coy, Melbourne, representing some 320 New World supermarkets throughout Australia, found little resistance to the concept by consumers. They cite such advantages from their chilled fish program as consistently improved quality, lower prices, and greater availability, regardless of the season.

The company uses the labels shown in Figure 3 to inform consumers whether the fish is strictly fresh or previously frozen. To evaluate how labeling affects sales of previously frozen fish domestically, a five-week study was conducted in four supermarket chain stores located in four central North Carolina cities. Trout and flounder were offered in a retail package consisting of approximately one pound of fillets placed in a blue, conventional, foam, meat tray with absorbent pad, sealed in a plastic bag (CVP Systems, Carol Stream, Illinois). The fish package carried two labels, one of which contained the brand name of the supplier (Virginia Capes, Fass Bros., Inc., Hampton, Va.), along with the species (trout or flounder), form (fillet), and preparation instructions. A separate quality label was used to enhance the quality image and denote whether the fish were strictly fresh or previously frozen.

Two stores located near Raleigh, N.C., and Chapel Hill, N.C., used the labels shown in Figure 4, while stores in Burlington, N.C., and Asheboro, N.C. (population approx. 50,000), used the Australian labels shown in Figure 3. Both species, labeled as fresh and previously frozen, were sold at each location. The labels and form of handling (fresh or previously frozen) were switched between the two species at two-week intervals. All fish fillets were priced at \$2.99 per pound.

Preliminary analysis revealed that:

(a) Overall, previously frozen fish fillets sold as well as or better than fresh fillets. By species, previously frozen flounder outsold fresh flounder by approximately 50 percent. Fresh trout sold approximately 25 percent better than previously frozen trout.

(b) Both label types (Australian and our design) gave approximately equal results, indicating that design differences had little effect on the perception of label information.

During the sales test, total chilled (fresh and previously frozen) fish sales varied by week due to undetermined factors, all stores experiencing the same general trend over the test period. To reduce problems associated with over- or under-stocking of the product, these factors should be identified to the greatest extent possible,

so that sales trends may be anticipated. In particular, it's likely that advertised specials on other meat or frozen fish items adversely affect chilled fish sales. In-store thawing of fish to meet sales demand has been suggested as one method of overcoming the perishable problem. However, experience shows that mishandling that could damage product quality is more likely to occur if thawing is done at the store level.

In conclusion, it is important to note that there is a strong consumer preference for chilled fish over frozen fish. Undoubtedly, this preference stems partly from past contact with the poor quality and appearance of frozen fishery products. Chilled fish is more convenient for those who want to avoid thawing the product at home. Chilled fish also has a more natural, unprocessed image than frozen. This image appeals to the modern consumer. Thus, strict control of handling is necessary to prevent the chilled product from ever being presented to consumers in a frozen state.

These studies have demonstrated not only that the technical problems associated with producing a quality, previously frozen, prepackaged fish fillet can be overcome, but also that consumers will readily accept the product, provided it is attractively packaged and of high quality. Whether, in fact, strictly fresh fish should even be included to ensure the success of a chilled fish program is not immediately obvious. Advertising by stores featuring only "strictly fresh" fish could be harmful to previously frozen product sales. But attention to quality and the competitive pricing of previously frozen fish should prove successful in combatting such attacks in the long run.

Commercial acceptance of the chilled fish concept in the United States would likely be increased by Grade A labeling of packaged chilled fish. Freezing and thawing has been a deceptive technique for handling product in the past, and Grade A labeling would increase customer confidence in the quality of the chilled product.

A chilled fish program can sell more fish, not only by providing a consistently high quality product to consumers, but also by enabling retailers to market a better selection of fish at lower prices. Conversely, currently strictly fresh programs are plagued by high prices, lesser availability and high perishability, leading many retail chains to eliminate fresh fish from their offerings. The chilled fish concept may offer needed relief to the fishing industry as it attempts to pit a hunted product against the produce of a feedlot.

(IT WORKS continued from page 68)

Retail packs are boxed and shipped via refrigerated vans to Coles & Coy supermarkets directly, or to a central refrigerated distribution system. Temperature is maintained at 0-2 degrees C (32-35 degrees F). To capitalize on country or inland areas with a higher than average demand for fish, Farmland product is air-freighted inland to several country towns. Some country stores report sales consistently 25 percent higher than those in comparable stores in metropolitan areas.

Each package carries a use-by date calculated for a shelf life of six days for white fish and seven days for smoked varieties. Product is pulled two days prior to its use-by date.

Originally Coles & Coy had planned to distribute frozen retail packages, utilizing local fish resources. At the time, a suitable frozen pack could not be located, and the concept was shifted to chilled fish. A range of IQF frozen fish in tray packs has recently been introduced, which "we are extending into all of our stores after a successful launch in two states," says Burton. Local supplies did not prove to be adequate in quantity or quality for sufficient supply, leading to a reliance on imports. A few especially popular species, such as kippers and smoked cod, are not available locally; nor does an acceptable alternative exist.

Production of individual packages of frozen fish subsequently thawed and sold chilled was also explored in the initial planning stages, but the method was rejected because of problems with drip loss and packaging difficulties.

After initial testing in Melbourne, marketing the chilled product throughout Australia began with giving it the Farmland label, Coles' nationally known and widely advertised food brand, used on hundreds of other food products. Consumer confidence in the range was given a head start, but the company also assumed the responsibility of providing quality, reasonably priced product to protect its image.

Once Farmland fish was available in all states, an advertising campaign began promoting the first nationally branded range of fresh fish. A successful promotion in one state was extended to all states to announce the opening of 42 new Farmland fish markets. Nutritional information on seafood was also provided. Now, weekly newspaper advertising announces products and prices.

Recipes have been developed to appear on packages. In addition, recipe leaflets are available for customers to increase their awareness of the versatility of fish.

Marketing previously frozen, chilled fish has not been a problem for Coles. "The only difficulty we have experienced," says Burton, "is maintaining quality through temperature control. However, this has been kept to an absolute minimum and restricted to the odd refrigeration mechanical breakdown."

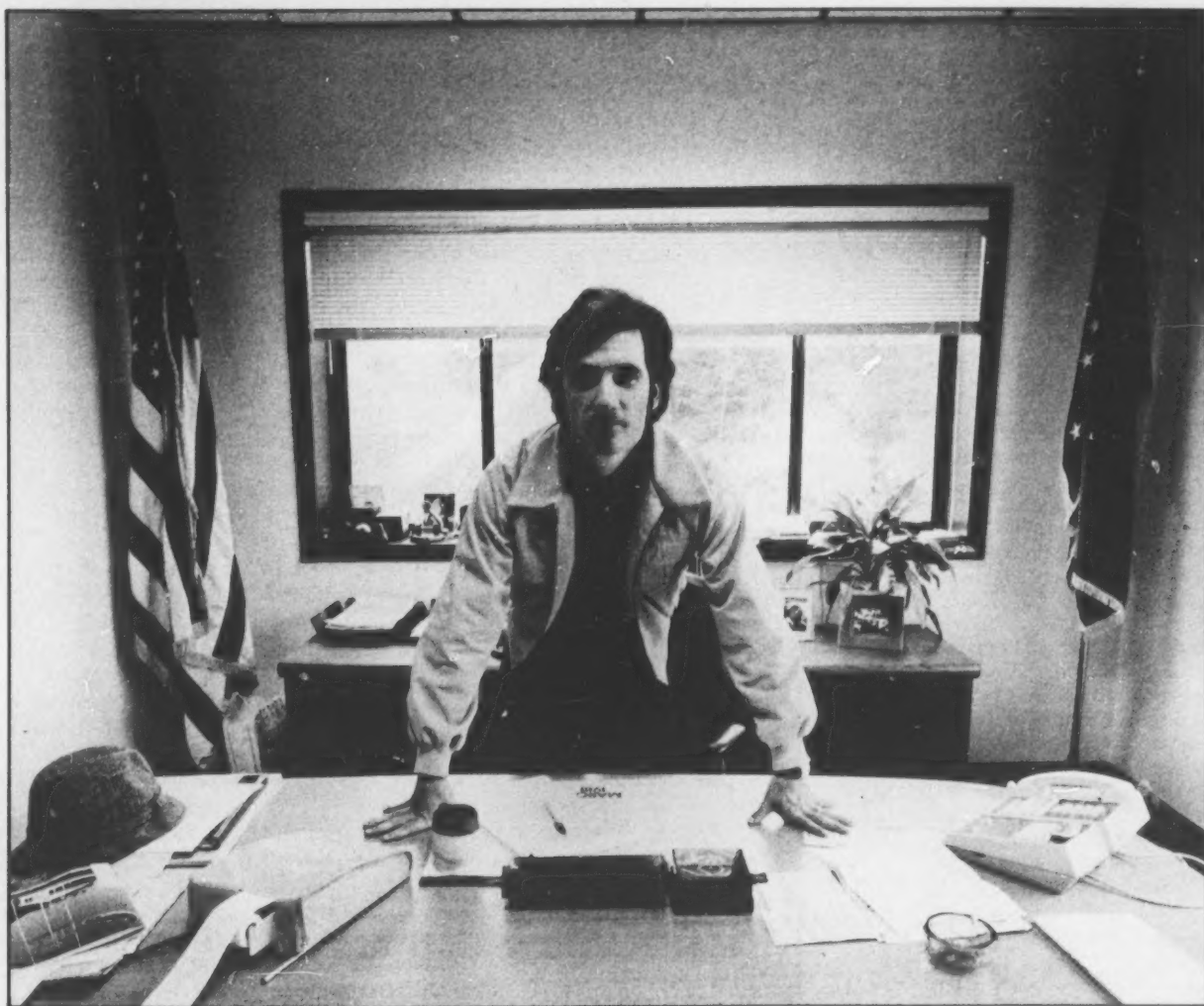
In a presentation in 1979, Lawrence Watson of Coles & Coy made the following recommendations to retailers contemplating introduction of a similar line of seafoods:

- 1) Be committed to selling chilled fish and prepared to spend considerable time and money on it.
- 2) Staff members must be knowledgeable about handling highly perishable foods so that ordering and stock rotation may be fine-tuned.
- 3) Storage and display standards must be extremely high.
- 4) Supply deliveries must be regular and reliable.
- 5) Customers must already have confidence in a retailer's perishables because of suspicion about fish quality and freshness.
- 6) Finally, a retailer must secure a reliable, conscientious, dedicated, knowledgeable and ethical supplier willing to accept a long-term outlook rather than a quick dollar.

— N.H.H.

HAND LABOR vs. AUTOMATION

Delays at International Seafoods Plant



"Our greatest limitation right now is our lack of in-house experience. We don't want to dump a lot of money into buying fish until we feel confident that we have the technological expertise to be competitive in the world market." Tony Aparo, general manager and vice president.

By Craig Bartlett

In many ways, the International Seafoods plant in Kodiak looks just like what it was intended to be: the most sophisticated seafood processing plant in the state of Alaska. Built by the Unification Church of the Reverend Sun Myung Moon for a cost of \$7.5 million, the box-shaped tomb is a virtual storehouse of state-of-the-art processing technology. Company managers say it was the first plant designed specifically to process both Alaska pollock and traditional species. A brief inventory reveals that the con-

troversial evangelist/industrialist spared no expense to make it a success.

So why, three years after construction began, has the plant not moved into full production? "We told people when we first came here that our emphasis was going to be on bottomfish, and that is still our intention," said Tony Aparo, general manager and company vice president. "Our greatest limitation right now is our lack of in-house experience. We don't want to dump a lot of money in-

to buying fish until we feel confident that we have the technological expertise to be competitive on the world market."

Aparo admits that there are also some structural problems built into the plant that have delayed production. The original plan was to process whitefish year round, while simultaneously running traditional species according to the season. Company managers now question whether there is sufficient space in the 14,000-square-foot production area to run

"The relatively low yield from Alaskan pollock and the high cost of U.S. labor make automation an attractive idea.... We have found, however, that there are no short cuts. The most important part of the work still has to be done by hand labor."

both at the same time.

"We have been forced to rethink a lot of our original ideas about how the plant would be operating," said Production Manager David Rogers, the principal architect of the two-story facility. "I'm afraid we've found that we didn't know as much about what it takes to produce a quality whitefish product as we thought we did."

The idea to build the plant in Kodiak was born at Uniworld Inc., the parent company in New York for all of Moon's seafood operations in the United States. At the time he was chosen to design the project, Rogers had been working in research and development at the International plant in Norfolk, Va., a facility he describes as a "1925 oyster plant in decay." Welcoming the chance to start at the ground floor on the new plant, Rogers arrived in Kodiak in 1978 armed with about 1,000 pounds of research material and a determination to "get things right the first time."

Working with architect Mike Pendergrast, the former general manager, Ted West, worked out a blueprint for a two-story building with a total floor space of 28,000 square



NAKAMURA

Production Manager David Rogers was principal architect of the two-story facility. He now questions whether the 14,000-square-foot production area is sufficient to process both whitefish and traditional species simultaneously.



MARTINI

Workers sort through a load of cod, pollock and flatfish at International Seafoods, where equipment was redesigned to accommodate additional hand labor.

feet for the last remaining waterfront property in Kodiak. The downstairs production room was designed to accommodate four separate processing lines, linked to six holding tanks on the dock by a system of conveyors. Against one wall was a continuous-cooker crab line, designed by Flohr Metal Fabricators to process 12,000 pounds per hour. Next to that was a combination salmon-butcher/whitefish-fillet line, with stations for 24 workers. Large pollock, from 18 to 37 inches, would be processed on an Arenco 6500 line, installed next to an Arenco 3500 line which would produce fillets from fish of 10 to 17 inches.

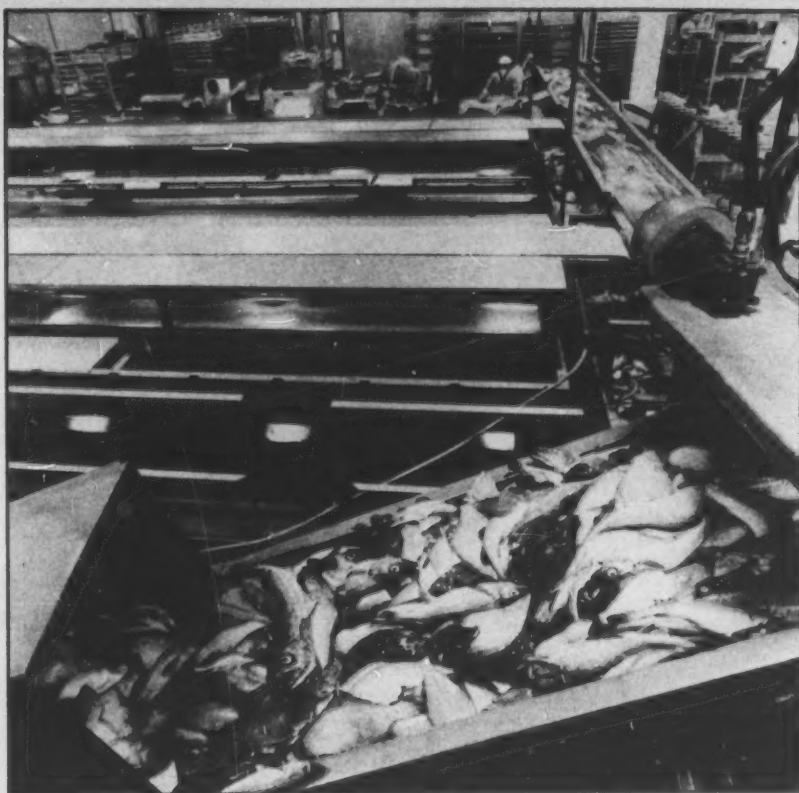
All of the equipment had been ordered and about half of it set in concrete when Rogers contacted the consultant firm of Neptune Dynamics in Vancouver, B.C., for ideas on a final floor plan in March 1980. Having worked with BC Packers and several other large companies in Canada, the consultants spotted several serious problems with the proposed layout. The first and most serious was that Rogers had not left nearly enough room for the candling and trimming operations necessary to prepare the whitefish fillets after they have been processed on the machines. Where the

original plan had allowed space for about 10 trimmers and 22 candlers, it was finally determined that the plant would need 20 trimmers and 16 candlers to handle the volume of production that had been anticipated.

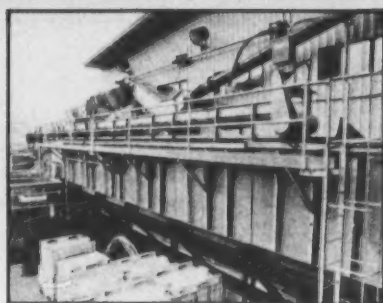
A similar problem was foreseen with the hand fillet line that was designed for salmon and whitefish other than pollock. Neptune Dynamics suggested a way to redesign the existing table to accommodate 24 hand filleters, rather than 12. The new configuration provided a quick solution to that situation, but Rogers has only recently completed a new design for the trimming and candling lines.

Although his plan provides stations for the additional workers, Rogers is concerned that the space limitations in that area of the plant will pose a continuing problem. "Our problem was that we were so dazzled by the machines that we did not pay nearly enough attention in our initial design to the hand processing that determines the quality of the final product. We have made that adjustment now, but we have had to do it by redesigning, which is what we were hoping to avoid."

The overemphasis placed on the automated aspects of the plant was not



A test load of bottomfish is routed through state-of-the-art processing equipment.



The plant stands on the last buildable piece of waterfront property in Kodiak.

so much oversight but a deliberate attempt to overcome the problem usually associated with the development of the U.S. whitefish industry, according to Aparo, who joined Rogers at the Kodiak plant about a year ago. "The relatively low yield from Alaskan pollock and the high cost of U.S. labor make automation an attractive idea," he said. "We have found, however, that there are no short cuts. The most important part of the work still has to be done by hand labor."

Last winter, Rogers, Aparo and a quality control specialist for International Seafoods took a "grand tour" of some of the largest whitefish processing facilities in the world. For five weeks, beginning in mid November, the group toured Europe, visiting major fish processing plants in Sweden, Norway, Iceland, Denmark and Germany. Back in the United States for a week during Christmas, the group was off again to Korea, where they saw a vastly different approach to the industry. They also worked for several weeks filleting pollock.

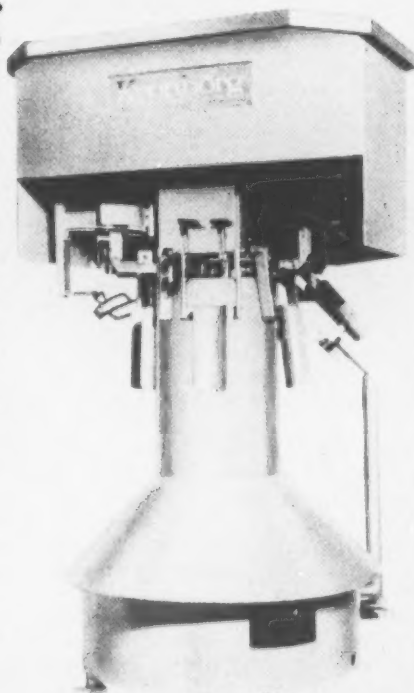
It was an invaluable experience, albeit somewhat sobering. In the European countries, they saw 30 years of technology in whitefish processing put to use in heavily mechanized plants producing high-yield cod fish fillets. In Korea, hundreds of individual workers hand filleted Alaskan pollock with a deftness that neither Aparo nor Rogers could approach.

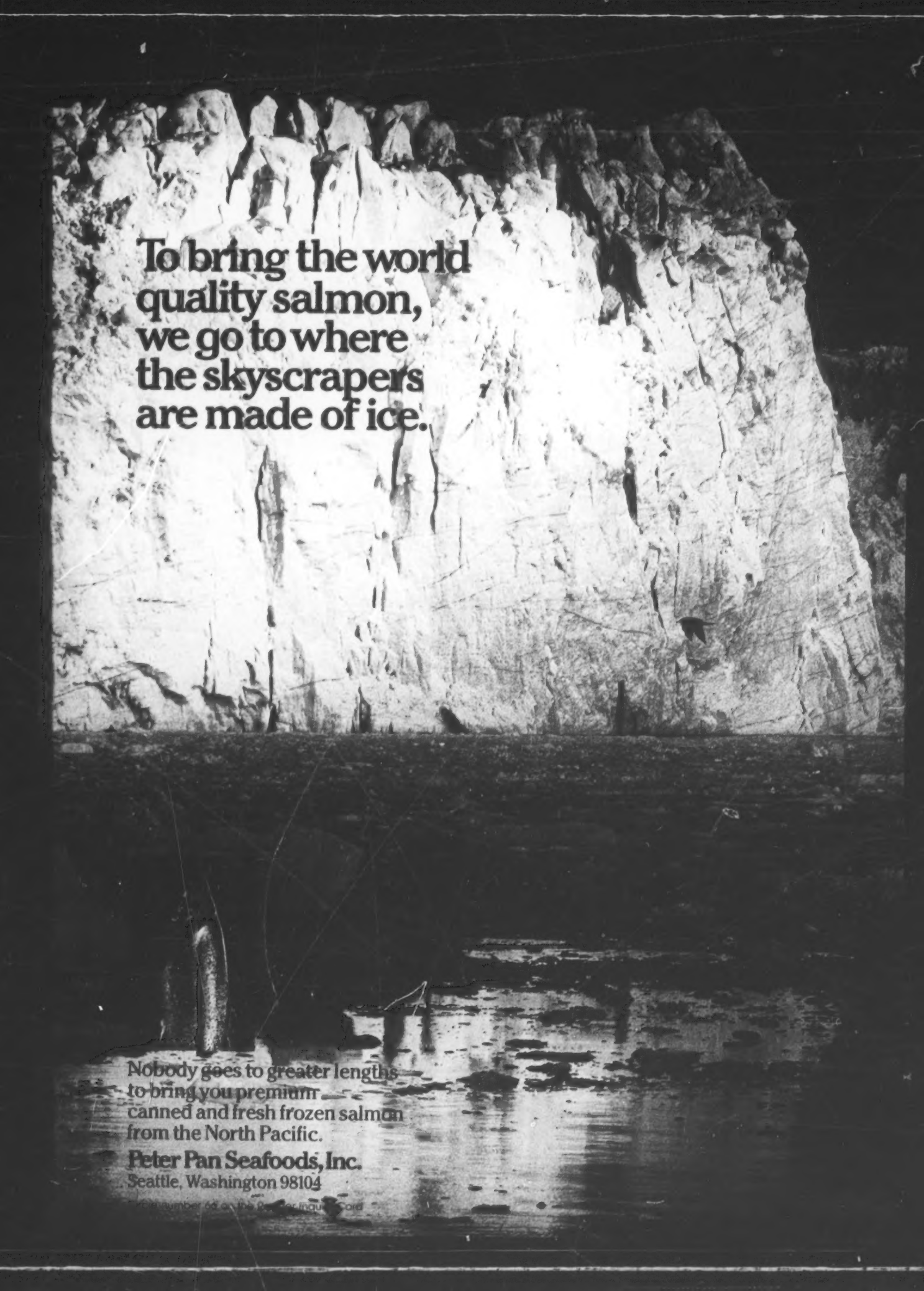
Although the International Seafoods plant has run about 30,000 pounds of pollock through their own machines, Aparo said they still have only a vague idea of what kind of recovery rate they can expect or where their margin of profit lies. "It seems that in Alaska we have to work out some combination of those two ways of approaching the industry if we want to carve a niche in the world market," he said. "We can import the technology from Europe, but so long as we are working with pollock, we're still faced with substantial hand processing. At International Seafoods, we're still trying to work out that balance."

Kronbörg Salmon deheading machine

Kronborg's new salmon deheading machine cuts off the head of the salmon with an absolute minimum waste of meat, and it also removes the gills. The precise cut is obtained because the machine is guided by the gill flap.

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NEW YORK'S OYSTER BAR

The Rebirth of a
Great Seafood Restaurant



Story and Photos by Jon Laitin



A team of shuckers performs in view of customers at the Oyster Bar and Restaurant, one of New York's top seafood establishments. Cost is rarely a factor in the selection of the highest quality seafood for a restaurant which purchases up to 4,000 pounds of seafood daily.

The story of the Oyster Bar and Restaurant at Grand Central Station in New York City is a tale of vision and revival.

After being allowed to decline to a second-rate soup and sandwich shop, the Oyster Bar and Restaurant was bought in 1974 by visionary entrepreneur, Jerry Brody, who has brought it back as one of the city's top seafood establishments.

The Oyster Bar and Restaurant story is one which has been repeated all over the United States in the 1970s and 1980s as seafood has found its way onto more and more menus. It's no secret that most of the real growth in seafood consumption over the past decade has been due to its popularity at both white-tablecloth and fast food restaurants.

Before purchasing the bankrupt Oyster Bar, Brody visited as many New York seafood houses as he could. They were thriving, he recalls. But except for a couple of establishments, he found that the food preparation was generally not up to a very high standard. He believed he could do much better.

Confident that the Oyster Bar's potential need not be influenced by the railway-station location, Brody set about to restore the restaurant to the standard it was known for a generation ago.

Brody's assessment of the Oyster Bar's possibilities was based on a lifetime of experience in the food-service business. His career includes a stint from 1947 to 1963 as president of Restaurant Associates, a group of investors who owned 50 restaurants in the United States and abroad.



More than 2,000 customers are served daily Monday through Friday, the same days the Fulton Fish Market operates. Freshness is guaranteed.

For the Oyster Bar renovation, Brody put together a topnotch management team and described his vision. The Oyster Bar, he believed, should feature only the highest quality seafoods. It should be a restaurant of strong personality, one whose quality would be apparent in everything from the type of silverware used to the choice of wines.

The result was instant success.

Within four years the Oyster Bar was grossing \$5 million annually. Today, more than 2,000 customers are served daily Monday through Friday.

The Oyster Bar's daily fare begins with purchases of fish, which, managers Steve Kovacs and George Morfogen point out, is fresh, never frozen. Up to 4,000 pounds are purchased daily at the Fulton Fish Market or shipped by air directly from Newfoundland, Holland and Canada, where fishermen containerize their catch on board to the restaurant's specifications.

Cost is rarely a factor. Availability is. The menu is printed daily to include only the seafood that has been properly handled and quickly delivered to shore. When Morfogen arrives at the Fulton market at 4:30 a.m. he does not have a shopping list in hand. "I buy what's fresh, interesting and different," he says. "I have to make sure I buy enough so it runs out, but not too soon."

The fish market's hours reflect the restaurant's hours, say the managers. Both are closed on weekends. Although the Oyster Bar could easily do a bustling business on Saturdays and Sundays, the management says it couldn't guarantee the same quality if it had to sell fish purchased on Friday.

New York, the expense-account capital of the world, can provide enough customers to support such an idealistic venture. Not to overlook the steady stream of less affluent subway riders who pass through the station's venerable halls, the restaurant also operates a takeout window where a bowl of clam chowder may be purchased for \$1.95.



Blue Points, Malpeques, Appalachicolas, Belon . . . a few of 11 varieties of oysters offered by the Oyster Bar.

A bar and comfortable waiting area welcome patrons when they pass through a wide expanse of glass portals. To the left, the spacious, open main dining room at the bow. Midship, counters are open to patrons who seek informality or who have less time to devote to their sturgeon or swordfish. The oyster bar, on the port side, is set as a multi-tiered stage where shuckers and chowder chefs perform for the customers below. The stern, mislabelled "Saloon," offers still another bar and a quiet, more intimate dining area where pictures and models of boats adorn mahogany walls.

Once seated, the hungry customers are faced with a single-page, 12" x 18" menu. For a start, one may order paper-thin slices of the restaurant's own smoked salmon, priced at \$5.75. Crab soup, at \$2.95, makes a fine second course. So does the famous oyster stew, for some a meal in itself.

Dining at the Oyster Bar without sampling the oysters may be as derelict as living on the coast and not owning a boat. There are usually 11 varieties to choose from, priced up to \$1.25 each for the highly touted Belon, raised in Maine waters.

The selection is impressive. Morfogen makes personal contact with all the harvesters. Wild oysters from Chincoteague Island, Va., removed from their beds with tongs, are a delicacy. The Kent Island oyster from Chesapeake Bay is particularly sweet. The Cotuit from Cape Cod has a saltier, purer taste, as does the Wellfleet from the same area.

The long, narrow Chatham, also from the Cape, has a slight metallic flavor due to the minerals in the water.

So does the Appalachicola from Florida. The Belon is noted for a stronger, fish-like flavor. The Blue Points from New York and the Malpeques from Prince Edward Island make fine eating.

The live lobsters, swimming in tanks in open view, are from "down-east." They are priced per pound well above the rates summer tourists are accustomed to in the utilitarian restaurants along the Maine coast.

The menu's highlight, located in the same, far-right column as the lead story in the *New York Times*, is headed "Today's Catch." "Items below are



broiled, unless indicated," reads the subhead. Then, listed in alphabetical order, are 40-plus fish from blue to wolf.

Not all items are available each day. Prices are as variable as the offerings. Last November, fried squid and weakfish were the daily bargains at \$8.95 and North Atlantic salmon topped the list at \$16.95. For the traditionalists, flounder, mackerel, scallops, sole and swordfish were scattered among the more regional fare of finnan haddie, grouper, tilefish and lotte tournedos, also known as goosefish, anglerfish, bellyfish or monkfish.

The restaurant's operational efficiency compares favorably to the high quality of its seafood. It takes 180 employees to keep the precision instrument, seating 486, in tune. When the lunchtime jam begins, waiters and waitresses hop, shuckers and chefs move in choreographed steps, managers coax, cajole, and occasionally give vent to the tensions inherent in the job.

A kitchen staff of 10 handles the

fish in a space reminiscent of a ship's galley. Outside, four shuckers prepare oysters and clams. Two stew chefs mix butter, clam juice, cream, water, spices and fresh mollusks for each order.

Below, butchers perform all the fish filleting by hand. All fish is purchased in the round and cut on the premises to ensure undamaged flesh. The restaurant's lower level also houses the pastry chefs and the electric smoking machines. Trout, sturgeon, salmon, mackerel, scrod and salmon trout are treated with the cold and/or hot smoking process. The restaurant will ship an entire side of smoked salmon anywhere in the world.

Morfogen, the restaurant's buyer, whose daily decisions can make or break the menu, says fish quality in the New York metropolitan area has improved substantially since the days when all fish had to be purchased from boats landing in the city. Today, day boats deliver their catches to the nearest port and the fish are trucked to New York, providing dealers with a product two or three days fresher.

Morfogen says he will buy vessel fish if it appears to be the top of the catch or if the boat made a short run due to bad weather. But if the seafood hasn't been handled carefully or if, after a close examination, the buyer suspects the fish is more than two days old, he will opt to leave a blank space on the menu.

Aside from quality, Morfogen also has to consider size and potential yield. He has been in the business long enough to calculate quickly how a given-size fish might be prepared, the size of the portion and the cost to the customer. By 6:30 a.m. the buyer has



completed his selection for the gourmets who show their appreciation by consuming enough to eliminate many of the selections from the menu by dinner time.

Benefits to evening diners are the prices, remaining the same in contrast to most other restaurants, and the offering of the so-called "full shore dinner." For \$16.95 patrons may feast on Manhattan clam chowder, steamers, a whole lobster or half chicken and half lobster, french fries, fruit pie or ice cream, coffee or tea. It is the only all-inclusive, fixed-price meal available.

"We never lose sight of the fact that the Oyster Bar is basically an American restaurant, although we serve seafood from other countries," notes Morfogen. It's only natural, he says, to emphasize East Coast fish. "American fishing grounds are some of the best in the world."

But the management never becomes complacent. Knowing the public is willing to pay for fresh, high-quality fish and meeting the demand are not enough. "We keep looking. If we see something different we buy it," Morfogen points out. "It's a big ocean."

The Carolina trigger fish is one of many offbeat fish introduced by the restaurant. Its ugly appearance and tough scales would discourage most experienced fish buyers. "I knew it was a great eating fish but it takes three hours to fillet," says Morfogen. It wasn't until he discovered that a bandsaw could do the job efficiently that trigger joined tautog, tile and tuna.

Mako shark and southern catfish, exotic fare for New Yorkers, also appear on the menu from time to time.



George Morfogen, manager and buyer, has been dealing with Fulton Fish Market sellers for 40 years. "I buy what's fresh, interesting and different," he says.

"Our customers are willing to try unusual species because they have confidence in us," says Morfogen.

Kovacs, who oversees the smoking operation, also has a free hand to experiment. He began the in-house operation four years ago and it has grown steadily since. Smoked fish is not only a popular appetizer, but smoked salmon has also become a gift idea appealing to the cosmopolitan customers. In recent months a full-page ad in the *New Yorker* magazine has further promoted this expensive, gourmet delight. Kovacs already has plans to experiment smoking oysters, scallops and possibly halibut.

Not all has changed at the 70-year-old restaurant. Stew chef Demos Xenos, who has been mixing the rich ingredients in public view since 1954, reports the only difference over the years has been the price. He recalls when a bowl sold for \$1.65. Today, oyster stew is a bargain at \$6.25. Xenos says customers who had frequented the restaurant long before he made his debut told him that his cooking rivaled his predecessor's. Some of these same patrons continue to make the pilgrimage to Grand Central for stews made with fresh oysters, clams, shrimp, lobster, scallops, mussels or a combination of these fruits of the sea. Prices go as high as \$12.45. A spicier version called panroast is also popular.

By 1:45 p.m. the pace begins to slacken. Morfogen, who has been overseeing the shucking operation during the crush, can attend to other business. Soon he will be heading home to Sheepshead Bay in Brooklyn, missing the infamous New York rush

hour. He is never accused of keeping banker's hours. He must be up by 3 a.m. the next day.

The restaurant's buyer has no complaints. On vacations he travels up or down the East Coast to meet with shippers. He has been dealing with the Fulton Fish Market sellers for 40 years. Driving to the bustling marketplace while New York sleeps is a task he enjoys. "People in the market are forthright, honest and square with me," he says.

Even so, he still carefully checks everything he buys. He will go to great lengths to find top-quality clams. He'll open them at the market until he finds the right kind from the right shipper. If anyone objects to his "meddling," he will leave the mollusks for some other seafood house.

Morfogen looks for a pinkish-white color and a clean, firm meat before selecting the little necks or cherrystones. To make doubly sure, he eats them raw for breakfast.

Detractors might say it is the New York milieu making this high-priced restaurant a success. When cost is not a factor, top quality is not difficult to achieve. But expensive eating establishments are as common in this city as the ubiquitous taxi cabs and pizza shops. At many of the prestigious dining spots, the food does not measure up to the sophisticated settings.

While high style may be missing at the Oyster Bar, its carefully selected and prepared seafood more than compensates. The management's "we are the best" attitude sets a standard loyal customers appreciate. The Oyster Bar never cuts corners.



BOTTOMFISH:

Markets Expand for Stable Supply

• Less abundant supplies and continued strong demand for fresh West Coast bottomfish should lead to improved margins for processing firms in 1982.

For much of the past 24 months, processors have been caught in the squeeze of high interest rates, an oversupply of product, and high operating costs. Interest rates and operating costs remain problems. But the future looks much brighter with continued high demand for fresh products, due, in part, to new markets opened up in the Midwest and the Southeast.

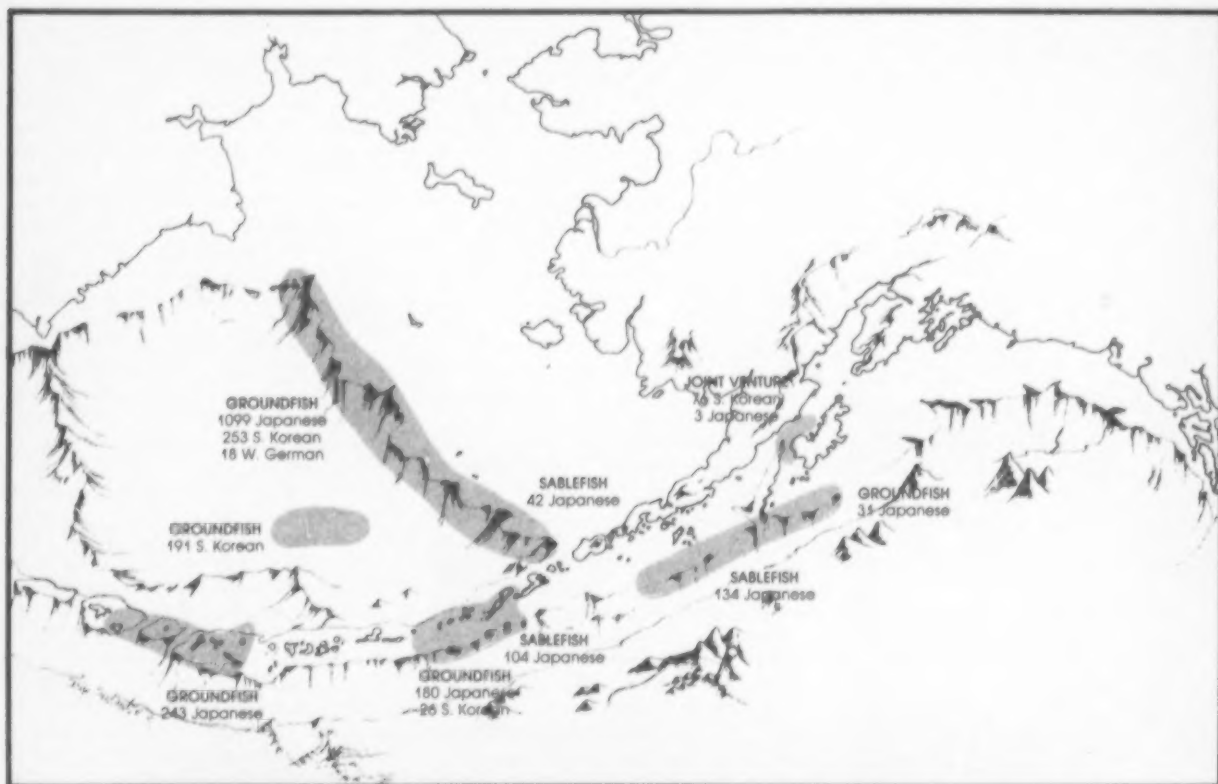
Another factor favoring Oregon, Washington and California shoreside processing is the decreasing fishing pressure as joint ventures have contracted vessels away from traditional fisheries.

• After two years of an oversupply of rockfish, the supply is leveling off. Record landings in 1981 were 111 million pounds, up from 80 million pounds in 1980. In Oregon, landings of widow (brown) rockfish were off substantially in the first quarter of

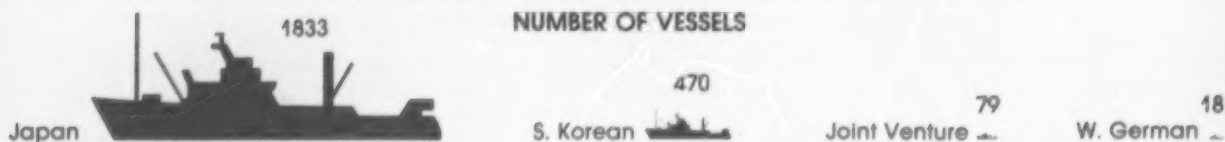
1982. There is concern by the Pacific Fisheries Management Council that widow rockfish has been overfished in some areas. The council predicts that 1982 will be a good year, but cautions against "unrealistic expectations." Wholesale prices for rockfish should remain in the \$1.00-to-\$1.10-per-pound range for the first half of 1982.

The Oregon Otter Trawl Commission is less optimistic about rockfish, predicting that the landings in Oregon will decline in 1982, while those in Washington and California will in-

(continued on page 83)



Foreign Fishing off Alaska in January 1982



Source: National Marine Fisheries Service

1981 Pacific Bottomfish Landings

(THOUSANDS OF POUNDS)

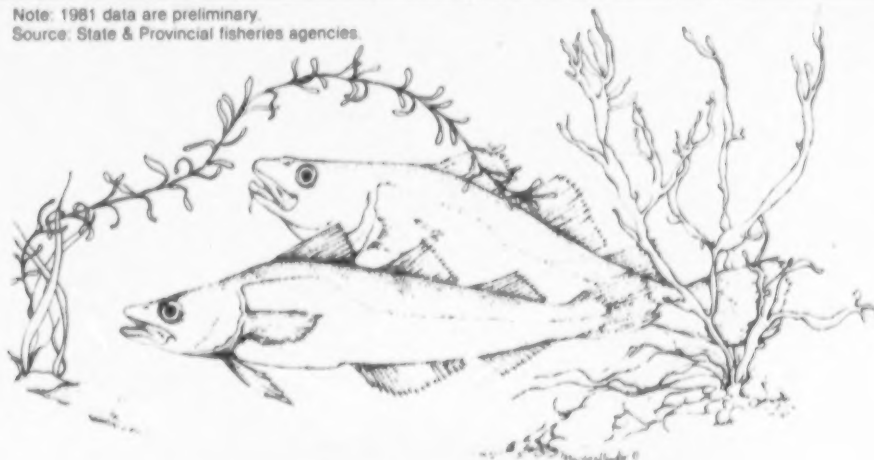
	WASHINGTON			OREGON			CALIFORNIA			BRITISH COLUMBIA		
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Cod, Pacific	8,269	12,990	22,091	1,037	357	119				16,675	14,357	14,079
Dogfish	9,406	7,126	4,813	85	56	11				2,795	10,017	2,116
Flounder	1,270	1,344	1,530	630	866	2,199		579	547	679	262	242
Halibut	569	2,911	3,249	43	177	150				6,469	7,264	4,648
Herring	7,392	6,943	2,240	162	141	148	9,260	15,666		95,797	55,442	
Lingcod	3,654	3,352	2,408	1,692	1,683	2,305	2,468	3,006	2,570	3,114	3,205	4,353
Pacific ocean perch	3,025	3,061	1,508	4,200	3,615	3,866	154	22	24	N/A	N/A	N/A
Pollock	1,078	938	2,113							7,463	4,803	2,621
Rockfish	26,900	32,470	32,450	19,481	35,173	50,466	21,214	24,965	28,157*	18,784	21,310	20,440
Sablefish	6,585	3,223	5,620	17,000	5,867	5,167	5,246	11,487	11,299*	2,453	5,232	4,379
Skate	215	126	182	409	184	86				375	560	525
Sole, Dover	5,402	4,459	4,320	11,170	9,081	11,261	23,395	16,748		1,889	2,735	6,929*
Sole, English	3,108	2,743	1,947	3,120	1,584	1,611	4,243	4,399	3,526	2,334	2,495	
Sole, petrale	1,605	1,326	705	2,290	1,891	1,953	2,770	2,246	1,661	439	439	
Sole, rex				1,602	1,176	1,356			1,689	456	313	
Sole, rock	529	366	315	191	28	21	9	11		3,886	3,817	
Whiting	9,782	11,350	9,435	303	605	360	1,741	1,525	115		24	815

*All soles.

•Through October.

Note: 1981 data are preliminary.

Source: State & Provincial fisheries agencies.



Alaska Bottomfish Catch

(METRIC TONS)

		GULF OF ALASKA		BERING SEA		TOTAL	
		1980	1981	1980	1981	1980	1981
Pollock	Joint Ventures		16,936.2		41,937.8		58,774.0
	Domestic Processors		782.7				782.7
	Total	2,003.7	17,618.9	10,787.7	41,937.8	12,791.4	59,556.7
Sablefish	Joint Ventures		.4		180.1		180.5
	Domestic Processors		1,152.7				1,152.7
	Total	1,573.8	1,153.1	43.9	180.1	1,617.7	1,333.2
Pacific Cod	Joint Ventures		57.9		9,330.0		9,387.9
	Domestic Processors		990.2		8,718.9		9,709.1
	Total	973.6	1,048.1	14,314.2	18,048.9	15,288.2	19,097.0
Flounder	Joint Ventures		17.7		21,958.8		21,976.5
	Domestic Processors		258.7		31.5		290.2
	Total	348.6	276.4	12,464.7	21,990.3	12,813.3	22,266.7
Pacific Ocean Perch	Joint Ventures				1.4		1.4
	Domestic Processors		1.3				1.3
	Total	23.8	1.3	51.9	1.4	75.7	2.7
Rockfish	Joint Ventures				7.0		7.0
	Domestic Processors		289.6		.8		290.4
	Total	204.1	289.6	10.9	7.8	215.0	297.4
Atka Mackerel	Joint Ventures				1,633.0		1,633.0
	Domestic Processors						
	Total	3.2		264.7	1,633.0	267.9	1,633.0
Other	Joint Ventures		43.0		3,438.7		3,481.7
	Domestic Processors		193.9		99.8		293.7
	Total	531.6	236.9	848.0	3,538.5	1,379.6	3,775.4
TOTAL	Joint Ventures		16,955.2		74,486.8		95,442.0
	Domestic Processors		3,699.1		8,851.0		12,520.0
	Total	5,662.3	20,624.3	38,786.5	87,337.8	44,448.9	107,962.1

Note: Preliminary data.

Source: ADF&G

1981 West Coast Frozen Food Fish

(POUNDS)

COMPANY AND LOCATION	HALIBUT	SABLEFISH	DOGFISH	ROE HERRING	BAIT HERRING	BOTTOMFISH FILLETS	WHOLE FISH	TOTAL
ALASKA								
Alaska Far East Corp., Naknek				155,080				155,080
Alaska Food Co., Inc., Kodiak	61,221	2,820			6,000	447,003		517,044
Alaska Packers Assn., Inc., Chignik Kodiak				286,273				286,273
Alaska Shell Inc., Akutan				696,928				696,928
Annette Island Packing Co., Metlakaila							3,970,107	3,970,107
Chugach Alaska Fisheries, Inc. Cordova	107,956	12,101		996,766	83,750		3,439	1,204,012
Columbia Wards Fisheries, Alitak Kodiak	254,000			500,000				500,000
Excursion Inlet Packing Co., Excursion Inlet	725,715			121,900				121,900
Halibut Producers Cooperative, Sitka	882,246	465,562						254,000
Harbor Seafoods Co., Inc., Wrangell	450,384			1,348,240				2,696,048
Icicle Seafoods, Homer	1,252,217			450,384				450,384
Petersburg	1,145,330	195,337		2,889,489				4,141,706
Seward	1,898,037			6,299,811	946,196		33,261	8,619,935
P/V Bering Star				2,427,651	1,410,905			5,736,593
Juneau Cold Storage, Inc., Juneau	725,654	232,113		2,512,044				2,512,044
Kodiak King Crab, Inc., Kodiak	270,615			6,834,620	367,520			1,325,287
Marine Resources Co., Inc., At sea processor						1,068,100	114,854,740	115,922,840
Morpac, Inc., Cordova	201			445,626				445,627
Nelbro Packing Co., Naknek				1,504,731				1,504,731
Northern Products Corp., Various	363,351	13,785					2,949	380,085
Ocean Beauty Alaska, Inc./ Ketchikan Cold Storage, Ketchikan	65,791							65,791
Pan Alaska Fisheries, Unalaska, M/V Royal Sea, M/V Royal Venture	12,000							12,000
Peter Pan Seafoods, Inc., King Cove				1,946				1,946
E.C. Phillips & Son, Inc., Ketchikan	99,387	27,516			512,200		290	639,393
Sea-Alaska Products, Inc., M/V Robert E. Resoff, Dutch Harbor	1,460			305,280				306,740
Sitka Sound Seafoods, Inc., Sitka	1,313,577	1,111,943		2,281,421	441,496		93,227	5,241,664
St. Elias Ocean Products, Inc., Cordova	555,088			499,800	284,100			1,338,988
Swiftsure, Anchorage, Kodiak	300,000				150,000			450,000
Trans-Pacific International Industries, Inc., Arctic Trawler						3,575,000		3,575,000
Trident Seafoods Corp., M/V Billikin, Bountiful, Mr. J. Tempest				6,424,968				6,424,968
Ultra Alaska Associates, Inc., Ultra Processor I				215,770				215,770
Western Alaska Fisheries, Kodiak	250,000			1,000,000	80,000			1,330,000
Yakutat Seafoods, Yakutat	76,248							76,248
TOTAL ALASKA	10,810,478	2,061,177		37,748,344	4,282,167	5,090,103	114,987,906	179,150,282
BRITISH COLUMBIA								
Central Native Fishermen's Cooperative, Bella Bella & Ucluelet	10,000			4,000,000	1,000,000		50,000	5,060,000
Prince Rupert Fishermen's Co-op Assn., Prince Rupert	893,945	178,247		10,622,520	273,019		13,712,947	25,680,678
Quality Fish Co., Inc., Vancouver	100,000			4,144,000	760,000		200,000	5,204,000
TOTAL BRITISH COLUMBIA	1,003,945	178,247		18,766,520	2,033,019		13,962,947	35,944,678
WASHINGTON								
Arrowac Fisheries, Ferndale			5,000,000					5,000,000
Chinook Packing Co., Chinook			305,118			3,700,000		4,005,118
Guilford Packing Co., Inc., Port Townsend							103,679	103,679
Jessie's Ilwaco Fish Co., Inc., Ilwaco		2,000,000				4,500,000		6,500,000
Mutual Fish Co., Inc., Seattle	2,000	40,000		1,000			10,000	53,000
Pacific Salmon Co., Inc., All plants	365,000	190,000					850,000	1,405,000
Seafarms Pacific, Port Angeles	250,000	1,500,000				500,000		2,250,000
Sea Run Seafoods, Ltd., Seattle	477,000	163,400				1,002,000		1,642,400
Seattle Seafoods, Seattle	668,724							668,724
Seawest Industries, Inc., Bellingham	800,000	800,000			175,000			1,575,000
Steuart Seafoods, Inc., Everett	69,680	32,250	28,821*			965,221		1,095,972
Swinomish Fish Co., LaConner		1,000						1,000
Washington Fish & Oyster Co., Seattle	350,120	238,472			39,680		240,285	868,557
TOTAL WASHINGTON	2,982,524	4,765,122	5,333,939	1,000	214,680	10,667,221	1,203,964	25,168,450
OREGON								
Alaska Packers Assn., Inc., Hammond						1,150,449		1,150,449
Astoria/Newport	10,162	547,212				658,805	23,133	1,239,312
TOTAL OREGON	10,162	547,212				1,809,254	23,133	2,389,761
CALIFORNIA								
Grader Fish Co., Fort Bragg		235,000				132,875		367,875
Meredith Fish Co., Sacramento	800,000	1,000,000					8,000,000	9,800,000
Reigal Fisheries, Moss Landing							3,946,731	3,946,731
Young's Food Processing, Los Angeles	800,000							800,000
TOTAL CALIFORNIA	1,600,000	1,235,000				132,875	11,946,731	14,914,606

* Fillets.

1981 Halibut Deliveries at Alaska Ports

(THOUSANDS OF POUNDS)

MONTH	KETCHIKAN	WRANGELL	PETERSBURG	SITKA	JUNEAU	PELICAN	MISC. S.E. ALASKA	CENTRAL ALASKA	TOTAL
June	156	465	1,407	2,063	749	1,107	1,924	7,614	15,485
July	—	—	—	—	—	—	—	456	456
August	—	—	—	11	—	—	—	770	781
September	—	—	—	43	—	—	—	20	63
October	—	—	—	—	—	—	—	—	—
November	—	—	—	—	—	—	—	107	107
December	—	—	—	—	—	—	—	47	47
TOTAL	156	465	1,407	2,117	749	1,107	1,924	9,014	16,939

Note: Data preliminary.

Source: International Pacific Halibut Commission

BOTTOMFISH (cont. from p. 80)

crease slightly. Rockfish landings all along the coast may decrease in 1983, the Commission predicts.

- Landings of Pacific cod in 1981 were nearly double those of 1980, due almost entirely to Washington's landings of 23 million pounds. Ling cod landings, 7.3 million pounds, were about equal to those of last year, while Pacific ocean perch declined from 7 million pounds to 5.4 million pounds.

- Dover sole landings increased from 27.6 million pounds landed in 1980 to 32.3 million pounds in 1981, while English and petrale landings slightly declined coastwide.

Watch for increased landings of arrowtooth flounder. Oregon landings for 1981 were 1.3 million pounds, up substantially from the 521,000 pounds as a three-year average. Surveys indicate an abundance of arrowtooth north of Newport, Oregon, and into Alaska.

- The halibut resource appears to be making a comeback after more than a decade of serious decline. 1981 landings of 25.6 million pounds are the highest since 1976. Even more encouraging, the International Pacific Halibut Commission is recommending a 1982 catch limit of 27.5 million pounds for fishermen of the United States and Canada.

Halibut stocks are building, particularly in the Gulf of Alaska where the abundance of young fish is increasing, a promising sign. The Commission continues to express concern that the incidental catch of halibut in fisheries targeting on other species is also increasing.

- The boom in Alaska bottomfish predicted five years ago has turned out to be a series of small bangs that have come in the form of innovative efforts by a handful of companies. Taken together, these efforts are yielding significant results.

(continued on page 86)

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Halibut Deliveries at Alaska Ports

(POUNDS)

YEAR	KETCHIKAN	WRANGELL	PETERSBURG	SITKA	JUNEAU	PELICAN	MISC. S.E. ALASKA	CENTRAL ALASKA	TOTAL POUNDS	YEAR
1950	6,992,000	479,000	3,140,000	3,103,000	3,823,000	3,351,000	75,000	4,372,000	25,265,000	1950
1951	5,170,000	496,000	2,869,000	1,985,000	2,386,000	2,294,000	192,000	3,642,000	19,034,000	1951
1952	7,696,000	430,000	3,022,000	2,023,000	2,645,000	2,244,000	139,000	2,661,000	20,860,000	1952
1953	4,823,000	368,000	2,847,000	1,662,000	1,706,000	2,829,000	214,000	3,625,000	18,074,000	1953
1954	5,611,000	376,000	4,117,000	2,382,000	3,382,000	3,040,000	385,000	3,408,000	22,901,000	1954
1955	3,811,000	298,000	3,393,000	1,040,000	2,679,000	2,621,000	397,000	5,026,000	19,265,000	1955
1956	7,639,000	727,000	4,151,000	1,772,000	3,049,000	2,215,000	1,154,000	3,200,000	23,907,000	1956
1957	5,741,000	660,000	3,703,000	1,359,000	2,364,000	1,879,000	327,000	3,835,000	19,868,000	1957
1958	6,992,000	521,000	3,497,000	1,179,000	2,085,000	2,449,000	386,000	5,114,000	22,223,000	1958
1959	9,443,000	773,000	3,384,000	984,000	2,367,000	2,232,000	434,000	6,701,000	26,318,000	1959
1960	6,263,000	660,000	3,972,000	1,234,000	2,054,000	1,973,000	415,000	6,966,000	23,537,000	1960
1961	9,498,000	670,000	5,338,000	1,533,000	1,698,000	1,693,000	773,000	4,811,000	26,014,000	1961
1962	10,806,000	747,000	5,904,000	1,333,000	1,912,000	1,910,000	727,000	9,403,000	32,742,000	1962
1963	8,008,000	405,000	3,963,000	1,211,000	2,170,000	1,345,000	517,000	11,150,000	28,769,000	1963
1964	7,052,000	298,000	4,248,000	472,000	1,235,000	1,161,000	179,000	6,975,000	21,620,000	1964
1965	8,749,000	363,000	5,035,000	1,090,000	1,824,000	1,528,000	370,000	9,473,000	28,432,000	1965
1966	8,346,000	385,000	4,199,000	1,230,000	2,131,000	2,183,000	480,000	9,932,000	28,936,000	1966
1967	7,713,000	401,000	4,818,000	753,000	1,961,000	1,357,000	264,000	8,325,000	25,592,000	1967
1968	3,225,000	197,000	3,018,000	510,000	1,022,000	643,000	109,000	4,700,000	13,424,000	1968
1969	3,265,000	554,000	4,838,000	790,000	1,601,000	1,506,000	239,000	8,408,000	21,201,000	1969
1970	2,875,000	652,000	3,806,000	720,000	1,717,000	1,405,000	365,000	14,547,000	26,087,000	1970
1971	2,371,000	417,000	2,589,000	1,264,000	1,233,000	1,446,000	394,000	14,197,000	23,911,000	1971
1972	1,035,000	342,000	2,561,000	1,229,000	1,017,000	1,143,000	207,000	15,279,000	22,813,000	1972
1973	787,000	405,000	3,165,000	952,000	960,000	1,091,000	552,000	12,537,000	20,449,000	1973
1974	465,000	397,000	3,047,000	463,000	769,000	1,021,000	769,000	6,693,000	13,624,000	1974
1975	417,000	441,000	3,171,000	598,000	873,000	1,622,000	1,230,000	9,633,000	17,985,000	1975
1976	344,000	539,000	2,174,000	590,000	674,000	1,694,000	1,522,000	9,389,000	16,926,000	1976
1977	143,000	281,000	1,878,000	649,000	277,000	963,000	879,000	9,205,000	14,275,000	1977
1978	289,000	524,000	2,065,000	935,000	445,000	1,373,000	700,000	8,111,000	14,442,000	1978
1979	232,000	467,000	2,255,000	1,353,000	697,000	1,587,000	1,569,000	6,952,000	15,112,000	1979
1980	131,000	355,000	2,083,000	1,347,000	726,000	961,000	1,076,000	4,842,000	11,521,000	1980
1981	156,000	465,000	1,407,000	2,117,000	749,000	1,107,000	1,924,000	9,014,000	16,939,000	1981

Note: 1981 data are preliminary.

Source: International Pacific Halibut Commission



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Pacific Halibut Catch by Areas and Nationalities

(POUNDS)

YEAR	AREA 1		AREA 2		AREAS 3 & 4			AMERICAN TOTAL	CANADIAN TOTAL	GRAND TOTAL	YEAR
	American	American	Canadian	Total	American	Canadian	Total				
1950	335,000	12,594,000	14,115,000	26,709,000	25,413,000	4,769,000	30,182,000	30,182,000	18,884,000	57,283,000	1950
1951	314,000	14,426,000	16,191,000	30,617,000	20,318,000	4,829,000	25,147,000	35,058,000	21,020,000	56,078,000	1951
1952	391,000	13,355,000	17,133,000	30,488,000	23,868,000	7,586,000	31,454,000	37,614,000	24,719,000	62,333,000	1952
1953	238,000	14,442,000	18,060,000	32,502,000	19,447,000	7,678,000	27,125,000	34,127,000	25,738,000	59,865,000	1953
1954	674,000	19,165,000	17,574,000	36,739,000	23,841,000	9,952,000	33,793,000	43,680,000	27,526,000	71,206,000	1954
1955	650,000	15,717,000	13,027,000	28,744,000	20,595,000	9,121,000	29,716,000	36,962,000	22,148,000	59,110,000	1955
1956	604,000	20,291,000	15,121,000	35,412,000	21,014,000	10,475,000	21,489,000	41,909,000	25,596,000	67,505,000	1956
1957	446,000	16,261,000	14,365,000	30,626,000	19,934,000	10,349,000	30,283,000	36,641,000	24,714,000	61,355,000	1957
1958	357,000	15,505,000	15,053,000	30,558,000	20,433,000	13,865,000	34,298,000	36,295,000	28,918,000	65,213,000	1958
1959	236,000	16,575,000	14,229,000	30,804,000	24,010,000	16,665,000	40,675,000	40,821,000	30,894,000	71,715,000	1959
1960	309,000	16,723,000	15,086,000	31,809,000	21,318,000	18,527,000	39,845,000	38,350,000	33,613,000	71,963,000	1960
1961	270,000	15,756,000	13,093,000	28,849,000	24,039,000	16,373,000	40,412,000	40,065,000	29,466,000	69,531,000	1961
1962	312,000	14,480,000	14,183,000	28,663,000	25,654,000	20,490,000	46,144,000	40,446,000	34,673,000	75,119,000	1962
1963	205,000	11,689,000	14,462,000	26,151,000	22,396,000	22,671,000	45,067,000	34,290,000	37,133,000	71,423,000	1963
1964	142,000	8,173,000	11,437,000	19,610,000	18,064,000	22,151,000	40,215,000	26,379,000	33,588,000	59,967,000	1964
1965	156,000	12,044,000	12,350,000	24,394,000	18,286,000	20,637,000	38,923,000	30,486,000	32,987,000	63,473,000	1965
1966	141,000	11,913,000	11,522,000	23,435,000	18,305,000	20,450,000	38,755,000	30,359,000	31,972,000	62,331,000	1966
1967	—	10,142,000	9,877,000	20,019,000	19,806,000	15,696,000	35,502,000	29,948,000	25,669,000	55,658,000	1967
1968	—	5,971,000	10,666,000	16,637,000	13,400,000	18,803,000	32,203,000	19,371,000	29,469,000	48,840,000	1968
1969	—	9,362,000	13,346,000	22,708,000	15,646,000	20,251,000	35,897,000	25,008,000	33,597,000	58,605,000	1969
1970	—	8,738,000	11,147,000	19,885,000	17,045,000	18,008,000	35,053,000	25,783,000	29,155,000	54,938,000	1970
1971	—	6,584,000	10,189,000	16,773,000	14,574,000	15,307,000	29,881,000	21,158,000	25,496,000	46,654,000	1971
1972	—	5,766,000	10,517,000	16,283,000	14,717,000	12,018,000	26,735,000	20,483,000	22,535,000	43,018,000	1972
1973	—	5,565,000	7,351,000	12,916,000	11,725,000	7,059,000	18,784,000	17,290,000	14,410,000	31,700,000	1973
1974	—	5,771,000	4,973,000	10,744,000	8,167,000	2,395,000	10,562,000	13,938,000	7,368,000	21,306,000	1974
1975	—	6,461,000	7,369,000	13,830,000	9,798,000	3,988,000	13,786,000	16,259,000	11,357,000	27,616,000	1975
1976	—	5,648,000	7,400,000	13,048,000	9,891,000	4,569,000	14,467,000	15,539,000	11,996,000	27,535,000	1976
1977	—	3,113,000	5,707,000	8,820,000	9,988,000	3,060,000	13,048,000	13,101,000	8,767,000	21,868,000	1977
1978	—	3,746,000	5,274,000	9,020,000	9,637,000	3,331,000	12,968,000	13,383,000	8,605,000	21,988,000	1978
1979	—	4,412,000	5,021,000	9,433,000	11,456,000	1,638,000	13,094,000	15,868,000	6,659,000	22,527,000	1979
1980	—	3,260,000	5,650,000	8,910,000	11,004,000	1,952,000	12,956,000	14,264,000	7,602,000	21,866,000	1980
1981	—	4,229,000	5,529,000	9,758,000	15,847,000	—	15,847,000	20,076,000	5,529,000	25,605,000	1981

Note: 1981 data are preliminary

Source: International Pacific Halibut Commission

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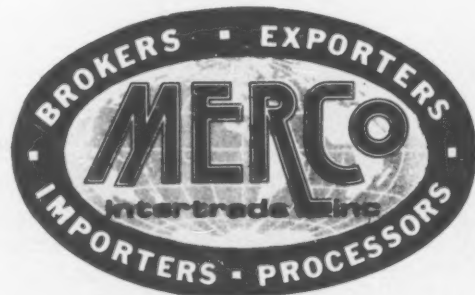
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BOTTOMFISH (cont. from p. 83)

Trans Pacific International Industries nearly doubled the production of Arctic Trawler cod fillets from 2 million pounds in 1980 to 3.75 million pounds in 1981. Trans Pacific has proven that an American factory trawler operation can be successful.

Alaska Food Company got its frozen production rolling and produced 447,003 pounds of fillets in 1981, primarily cod and pollock.

Bottomfish landings of the largest joint venture, Marine Resources, were up slightly in 1981 to 114.9 million pounds. Because of Soviet participation in Marine Resources, the joint venture continues to labor under the acts of the Reagan administration.

• The 1981 crash of the Bering Sea king crab resource is stimulating important new efforts in salted frozen cod. It started early last year when several vessel owners bought splitting machines and other equipment required to produce salt cod. The maximum sustainable yield of Pacific cod in Alaska is about 400 million pounds.

This is not the first time Alaska has had a salt cod fishery. The dory fishery out of Seattle and San Francisco worked Alaska waters until 1950, and the last schooner, C.A. Thayer, was retired because the operation was no longer economical.

Today's salt cod trawl fishery includes, thus far, 18 splitting machines with a combined capacity of 1 million pounds per day. Among the shore-based companies that are either already in the salt cod business or are planning operations are Trident Seafoods, Alaska-Shell and Universal Seafoods.

One foreign producer going into the salt cod business is Jangaard A/S. With its U.S. operation, Jangaard is establishing a three-line salt cod plant this year in Dutch Harbor.

The success of American companies will depend upon their ability to compete in the market — primarily Spain, Portugal, Italy, France and Greece — against salt cod from Iceland, Norway and Canada.

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Pacific Herring Landings

(SHORT TONS)



	1977		1978		1979		1980		1981	
	BAIT	SAC ROE	BAIT	SAC ROE	BAIT	SAC ROE	BAIT	SAC ROE	BAIT	SAC ROE
ALASKA										
Southeastern	6,409	2,658	4,042	3,062	3,480	3,087	2,700	6,458	1,833	6,740
Bristol Bay		2,791		7,751	901	10,251	2,993	16,603	75	12,538
Prince William Sound	17	2,284	1,044	1,357	762	4,136	298	6,280	1,278	14,105
Cook Inlet	21	3,199	149	402	65	534	32	104	36	221
Arctic-Yukon-Kuskokwim		10		301		1,807	135	4,031	146	6,919
Kodiak		338	283	621	107	1,735	150	2,932		2,063
Chignik										447
Alaska Peninsula									700	841
TOTAL	6,447	11,280	5,518	13,494	5,315	21,550	6,308	36,408	4,068	43,874
BRITISH COLUMBIA										
Queen Charlotte Islands		14,179		14,719		9,600		3,032		7,072
Northern & Central Coast		19,284		20,744		2,763		3,591		11,218
Strait of Georgia		43,346		11,919		7,433		4,104		10,024
West Coast of Vancouver Island		34,618		22,211		21,281		6,730		11,061
TOTAL		80,872		69,593		41,098		17,457		39,375
CALIFORNIA										
San Francisco Bay		4,224		5,016		4,121		6,450		5,826
Tomales Bay & Bodega Bay		597		716		448		596		448
Humboldt Bay		21		12		49		49		43
Crescent City				13		12		26		6
TOTAL		4,842		5,757		4,630		7,121		6,323
WASHINGTON										
All Points		2,303		2,134	1,781	1,915	3,471	1,587	1,119	
TOTAL	6,447	99,297	5,518	90,978	7,096	69,193	9,779	62,573	5,187	89,572

*Note: 1980 Alaska and 1981 data are preliminary. British Columbia figures are on the grounds estimates.

Source: State and provincial fisheries agencies.

Halibut Deliveries at British Columbia Ports

(POUNDS)

YEAR	PRINCE RUPERT*	VANCOUVER NAMU	DIST. NO. 3 & VICTORIA	TOTAL CANADIAN	U.S. VESSELS	TOTAL	YEAR
1961	16,675,000	7,154,000	1,085,000	24,914,000	1,755,000	26,669,000	1961
1962	18,702,000	4,761,000	1,354,000	24,817,000	644,000	25,461,000	1962
1963	17,894,000	6,359,000	1,557,000	25,810,000	733,000	26,543,000	1963
1964	18,602,000	6,268,000	833,000	25,703,000	562,000	26,265,000	1964
1965	20,084,000	4,627,000	968,000	25,679,000	566,000	26,245,000	1965
1966	18,221,000	4,963,000	1,298,000	24,482,000	595,000	25,077,000	1966
1967	10,028,000	7,885,000	1,054,000	18,967,000	332,000	19,299,000	1967
1968	13,571,000	7,568,000	1,248,000	22,387,000	104,000	22,491,000	1968
1969	19,323,000	6,314,000	1,241,000	26,878,000	511,000	27,389,000	1969
1970	13,929,000	4,974,000	911,000	19,714,000	1,770,000	21,484,000	1970
1971	11,508,000	4,205,000	520,000	16,233,000	1,568,000	17,801,000	1971
1972	10,442,000	3,478,000	712,000	14,632,000	1,300,000	15,932,000	1972
1973	7,025,000	2,382,000	535,000	9,942,000	270,000	10,212,000	1973
1974	4,570,000	1,610,000	180,000	6,360,000	154,000	6,514,000	1974
1975	5,336,000	2,141,000	434,000	7,911,000	115,000	8,026,000	1975
1976	6,497,000	2,734,000	277,000	9,508,000	6,000	9,514,000	1976
1977	3,898,000	2,182,000	211,000	6,291,000	5,000	6,296,000	1977
1978	3,187,000	1,797,000	158,000	5,142,000	111,000	5,253,000	1978
1979	3,349,000	1,578,000	573,000	5,500,000	247,000	5,747,000	1979
1980	2,834,000	2,726,000	632,000	6,192,000	—	6,192,000	1980
1981	2,388,000	2,040,000	610,000	5,038,000	—	5,038,000	1981

*Prince Rupert, Masset and District #2 combined.

Note: 1981 data preliminary.

Source: International Pacific Halibut Commission

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British Columbia Halibut Deliveries

(THOUSANDS OF POUNDS)

MONTH	PRINCE RUPERT*	VANCOUVER NAMU	DIST. NO. 3 & VICTORIA	TOTAL
January	3	—	—	3
May	832	866	299	1,997
June	887	625	168	1,680
July	421	466	126	1,013
August	230	82	17	329
September	7	—	—	7
October	—	—	—	—
November	8	—	—	8
December	—	1	—	1
TOTAL	2,388	2,040	610	5,038

*Prince Rupert, Masset & District #2 combined.

Note: Data preliminary.

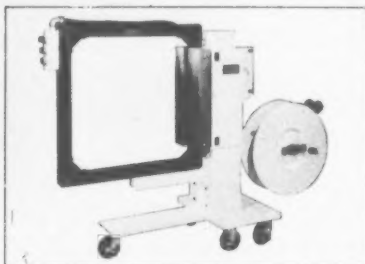
Source: International Pacific Halibut Commission

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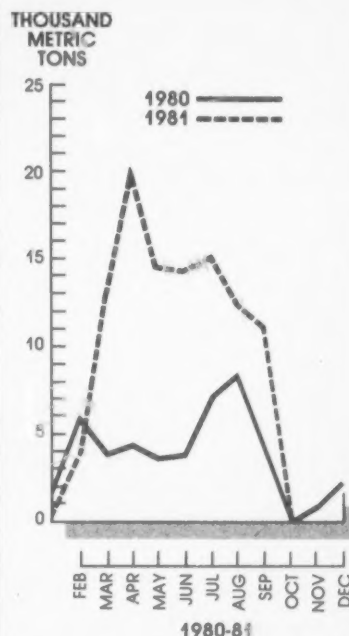
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Alaska Bottomfish Catch



Note: Preliminary data

Source: ADF&G

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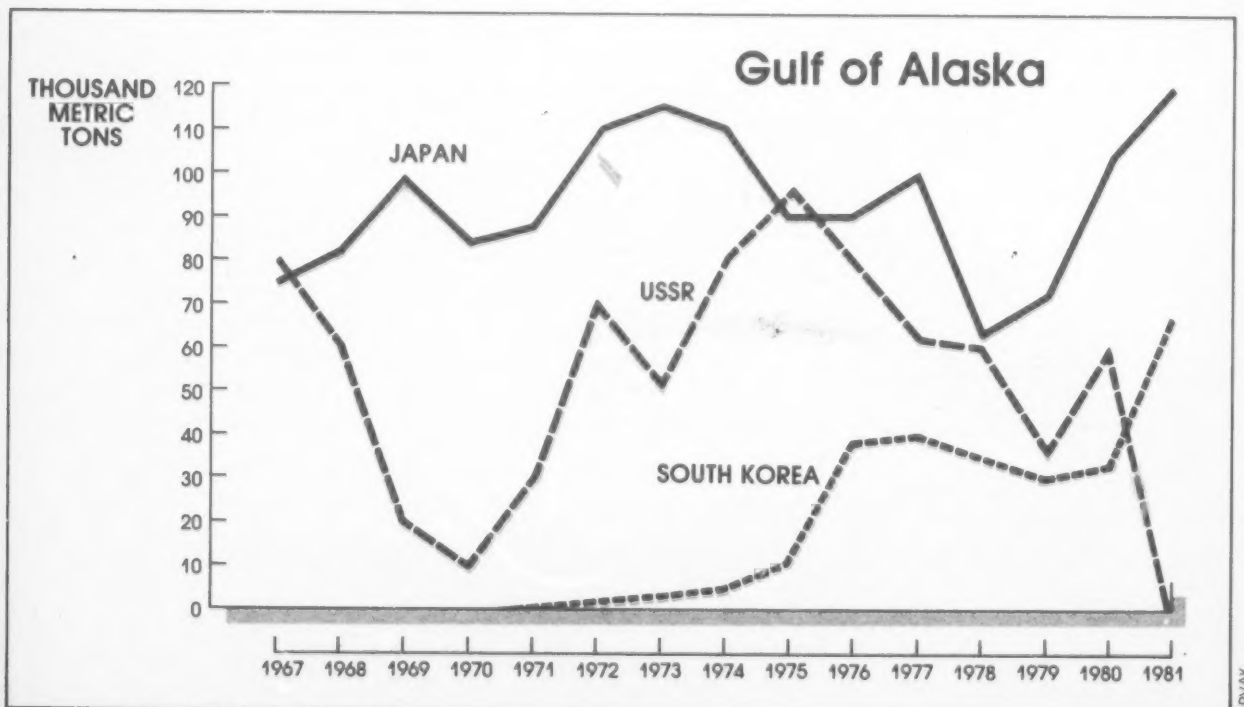
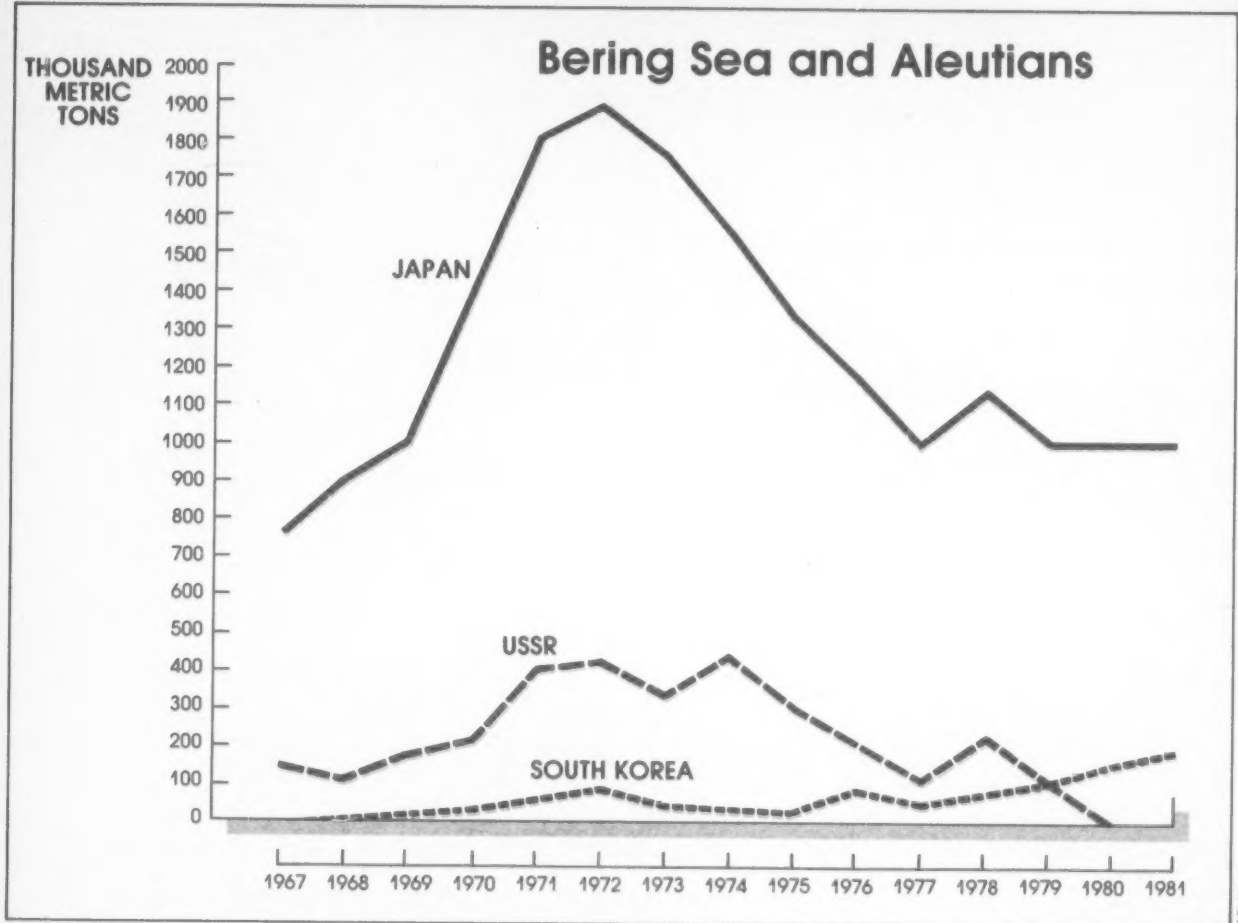
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1982 Foreign Fishery Allocations

Bering Sea and Aleutians

(METRIC TONS)

	JAPAN	ROK	TAIWAN*	FRG	UNALLOCATED	TOTAL
Pacific Cod	8,333	1,410	250	200	21,307	31,500
Yellowfin Sole	32,974	3,194	464	500	47,818	84,950
Turbot	32,180	2,783	462	500	48,500	84,425
Other Flounders	20,164	2,015	316	500	30,755	53,750
Atka Mackerel	2,000	1,685	119	420	19,236	23,460
Pollock						
Bering Sea	346,553	46,416	6,103	5,334		
Aleutians	37,913	4,989		573		
Subtotal	384,566	51,405	6,103	5,907	582,469	1,030,450
Pacific Ocean Perch						
Bering Sea	307	43	23	5		
Aleutians	1,109	146		17		
Subtotal	1,416	189	23	22	5,803	7,453
Sablefish						
Bering Sea	790	173	38	14		
Aleutians	219	46		4		
Subtotal	1,009	219	38	18	1,816	3,100

*Being held until reporting requirements are met.

Source: Department of State, December 30, 1981.

Gulf of Alaska

(METRIC TONS)

SPECIES	JAPAN	ROK	UNALLOCATED	TOTAL
Pacific cod	12,294	1,366	24,340	38,000
Flounders	8,643	2,084	12,893	23,620
Atka mackerel	3,000	2,500	15,390	20,890
Pollock	25,500	12,750	75,480	113,730
Pacific ocean perch	2,406	538	4,136	7,080
Other rockfish	1,144	917	3,119	5,180
Sebastes	1,127	246	1,621	2,994
Sablefish	200	100	3,620	3,920
Squid	1,226	339	2,285	3,850
Other species	3,009	1,504	6,727	11,240
TOTAL	58,549	22,344	149,611	230,504

Source: Department of State, December 30, 1981.

Atlantic

(METRIC TONS)

COUNTRY	SILVER HAKE	RED HAKE	RIVER HERRING	SHARK*	OTHER FINFISH
Bulgaria	2,000	487	20	—	3,778
Faroe Islands	—	—	—	500	100
Italy	2,000	487	10	—	3,778
Japan	1,242	900	10	—	3,778
Portugal	2,000	478	5	—	3,778
Spain	1,400	487	10	—	3,778

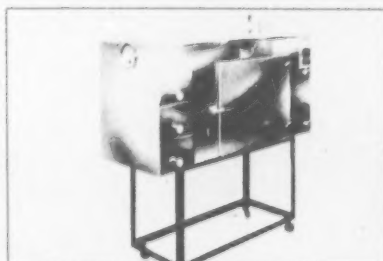
*Except dogfish.

Source: Department of State, December 30, 1981.

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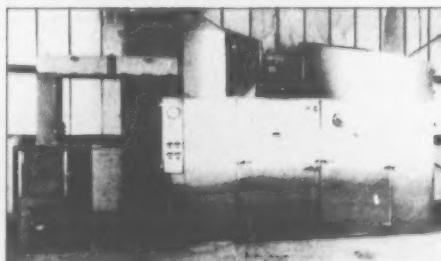
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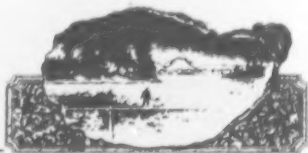
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Aquaculture

West Coast Public Hatchery Releases

(RELEASES OF FISH IN MILLIONS)

PROGRAM	SUMMER CHINOOK	SPRING CHINOOK	FALL CHINOOK	COHO	CHUM	SOCKEYE	PINK	TOTAL
WASHINGTON (1980)								
Washington Dept. of Fisheries		17.85	85.61	74.87	57.16		4.56	240.05
U.S. Fish & Wildlife Service		7.68	34.95	7.03	6.25			55.91
Tribes			4.82	11.40			.29	16.51
WDF-Cooperative		.67	1.01	1.26	2.28			5.22
School			.15	.34	1.56		.03	2.08
TOTAL WASHINGTON		26.20	126.54	94.90	67.25		4.88	319.77
OREGON (1981)								
Oregon Dept. of Fish & Wildlife								
Columbia River		7.10	27.42	6.91	.03			41.46
Coastal		1.04	1.45	3.41				5.90
Federal Hatcheries								
Columbia River		1.01		.94				1.95
TOTAL OREGON		9.15	28.87	11.26	.03			49.31
IDAHO (Oct. 1, 1980 - Sept. 30, 1981)								
Idaho Dept. of Fish & Game	.25	4.00						4.25
Federal Hatcheries		1.13	.18					1.31
TOTAL IDAHO	.25	5.13	.18					5.56
ALASKA (1981)								
Alaska Dept. of Fish & Game			.73	2.60	39.40	25.23	62.65	130.61
CALIFORNIA (Oct. 1980 - Sept. 1981)								
Federal			16.06					16.06
State			12.47	1.00				13.47
TOTAL CALIFORNIA			28.53	1.00				29.53
BRITISH COLUMBIA (1981)			19.03	4.99	93.21	143.00	6.04	266.00

Source: State fisheries agencies.

Alaska Private Nonprofit Hatchery Releases and Returns

(NUMBERS OF FISH)

	1978		1979		1980		1981	
	RELEASES	RETURNS	RELEASES	RETURNS	RELEASES	RETURNS	RELEASES	RETURNS
Alaska Aquaculture Foundation, Inc.								
Burnett Inlet, Wrangell								
Pink			2,000,000		250,000	800	100,000	16,500
Chum							200,000	
Total							300,000	16,500
Douglas Island Pink & Chum, Inc.								
Kowee Creek, Juneau								
Pink			2,200,000	10-20,000	2,178,500	5,000	2,200,000	14,000
Chum			50,000		224,104		1,000,000	100
Total			2,250,000	10-20,000	2,382,604	5,000	3,200,000	14,100
Sheep Creek								
Pink							1,000,000	
Prince William Sound Aquaculture Corporation								
Port San Juan								
Pink	16,940,000	154,620	23,000,000	500,000	22,576,000	1,493,090	72,500,000	2,264,845
Chum	1,014,000		250,000		395,000	1,390	700,000	20,380
Total	17,954,000	154,620	23,250,000	500,000	21,971,000	1,494,480	73,200,000	2,285,225
NERKA, Inc.								
Perry Island, Prince William Sound								
Pink					200,000	450,000	100,000	1,000
Sheldon Jackson College Aquaculture Program								
Indian River, Sitka								
Pink	7,147,874	5,777	2,500,000	48,000	7,650,000	5,540	2,100,000	195,000
Chum			600,000		50,000	200	100,000	38
Coho					12,196		100,000	250
Total	7,147,874	5,777	3,100,000	48,000	7,712,196	5,740	2,300,000	195,288
Southern Southeast Regional Aquaculture Association								
Whitman Lake, Ketchikan								
Chum					2,672,000		18,600,000	
Coho					549,000		800,000	51,800
Total					3,221,000		19,400,000	51,800
Total, All Programs								
Pink	24,087,874	160,397	29,700,000	558,000	31,834,500	1,504,880	78,800,000	2,491,345
Chum	1,014,000		900,000		3,341,104	1,590	21,900,000	20,518
Coho					561,196		900,000	52,050
GRAND TOTAL	25,101,874	160,397	30,600,000	588,000	35,736,800	1,506,470	101,600,000	2,563,913

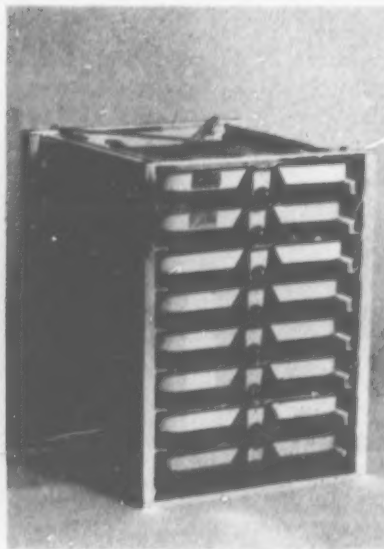
Source: ADF&G

Oregon Private Salmon Hatchery Releases

YEAR OF RELEASE	SPRING CHINOOK	FALL CHINOOK	COHO	CHUM	TOTAL
1972				51,150	51,150
1973		10,025		276,375	286,400
1974		1,018,277	87,782	572,082	1,681,141
1975	5,551	17,982	142,032	2,792,930	2,958,495
1976	181,251	147,662	2,079,834	2,447	2,391,194
1977	42,079		2,370,690	120,400	2,533,169
1978	15,790	522,101	9,907,874	465,174	10,910,939
1979	1,397,131	222,811	5,811,741	10,940,199	18,371,882
1980	1,268,718	438,136	14,817,346	8,000	16,532,200
1981	1,727,399	456,152	23,840,335	5,528,589	31,554,475

Note: 1981 data preliminary
Source: Oregon Dept. of Fish & Game

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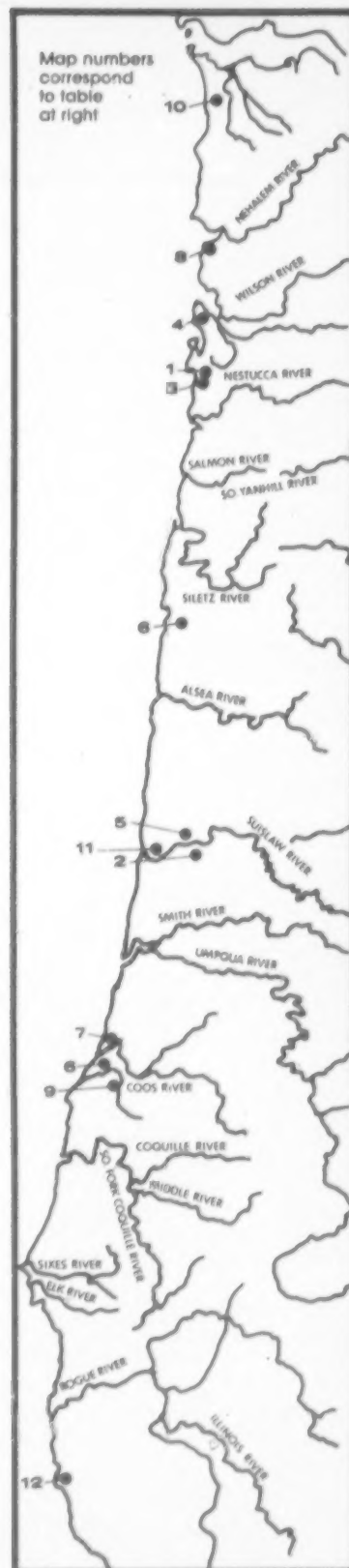
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Locations of Oregon Private Salmon Hatcheries



Oregon Private Salmon Hatcheries

MAP NO.	COMPANY NAME AND LOCATION	RELEASE LIMIT (MILLIONS)			YEAR OF FIRST RELEASE			TOTAL RELEASES 1972 TO DEC. 1981 (MILLIONS)			
		Coho	Chinook	Chum	Coho	Chinook	Chum	Coho	Spring Chinook	Fall Chinook	Chum
1	Keta, Inc. Sand Creek, Sand Lake			5.0			1972				4.69
2	Siuslaw Fisheries, Inc. Sweet Creek, Siuslaw River			5.0			1973				2.25
3	Alfred Hampson Sand Creek, Sand Lake			5.0				Combined with Keta			
4	Cecil Harris and Don Hugie Dick Creek, Tillamook Bay			0.1			1973				.03
5	Ceratodus Fisheries Divide Creek, Siuslaw River			5.0			1975				.50
6	Oregon Aqua Foods, Inc. Manmade Tributaries, Yaquina Bay Coos Bay	9.5 11.3	10.6 9.4	20.0 20.4	1974 1977	1974 1979	1973 1979	35.08 16.64	1.20 .43	1.30	4.25 8.21
7	Anadromous, Inc. Manmade Tributary, Coos Bay	5.0	5.0		1976	1975		5.50	1.42	.45	
8	A. Manseth and J. Jaqua Vosberg Creek, Nehalem Bay			5.0			1980				.65
9	Calvin Heckard Unnamed Tributary, Coos Bay			5.0		no releases			no releases		
10	Robert Stricklin Unnamed Tributary, Skipanon Road			5.0		no releases			no releases		
11	Domsea Farms, Inc. Manmade Tributary, Siuslaw Bay	12.0	12.0	25.0	1978	1978		1.54		.15	.18
12	Burnt Hill Salmon Ranch, Ltd. Burnt Hill Creek		5.0			1980			1.57	.99	
								98.76	4.62	2.89	20.76
								GRAND TOTAL			

Source: Oregon Dept. of Fish and Game

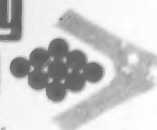


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SBR / SPRING 1982 95

Salmon Enhancement in Japan

Cries of "Come Back Salmon" Rewarded with Record Returns

By Tim Joyner

In 1981, the autumn runs of salmon to the rivers of northern Japan set all-time records. By December 20, over 21,700,000 had been taken in set nets along the coast and in fish traps in the rivers, far exceeding the 16,660,000 that had been predicted for the year. The previous record of over 18,900,000 had been set in 1979.

The extraordinary success of Japan's all-out effort to rebuild its depleted native stocks of salmon is the result of careful planning, hard work and, above all, enthusiastic cooperation between fishery scientists, hatchery workers, fishermen's cooperatives, national, regional and local governments, and in recent years, a growing number of citizen volunteers. Their diverse contributions have been so well coordinated that each has reinforced the others.

When examined separately, there is little that is unique about any of them. Japanese salmon and trout hatcheries are updated versions of a type used in New England towards the close of the 19th century. Collectively, however, the cooperative, well-coordinated salmon enhancement programs of Japan contrast starkly with some of the adversary-ridden efforts currently sputtering along in North America. There, all too often, bitter competition between special interests has affected decisions on such critical matters as the location, timing and methods appropriate for harvesting specific stocks of salmon; to whom salmon fishing licenses should be issued, and whether or where hatcheries should be built. Under these conditions, such decisions tend to reflect concern more for the relative political power of special interests than for the rational rebuilding of a resource.

In Japan, emphasis on further development of salmon enhancement programs is now shifting from a system dominated by large, government-operated hatcheries and management by decree, to development of a decentralized system of "private" hatcheries. For the most part, these are owned and operated by small fishermen's cooperatives with interests in specific localities on the coast or along designated parts of river systems. Within guidelines provided by the National Fishery Agency, decisions concerning specific stocks, among the men whose livelihoods depend on them, may be applied readily to their management. In 1981 in Hokkaido,



Chum salmon are harvested by members of the Chitose Fishery Cooperative Association from the "Indian Fish Wheel" on the Chitose River, Hokkaido, Japan. The salmon were produced at the Chitose Hatchery of the Hokkaido Salmon Hatchery Service of the Japan Fishery Agency. Returns average around 2.5 percent.

the northernmost of Japan's four main islands and the locale of the nation's most productive salmon fisheries, there were 37 national or prefectural and 82 private hatcheries for the production of salmon and trout. For 1982, six more private hatcheries are planned.

Spurred by the successful integration of the "private" salmon enhancement efforts of local fishery cooperatives with those of the national and prefectural governments, volunteer citizens groups are demanding, and getting, a share of the action. In Sapporo, a sprawling metropolis of 1.3 million persons and the capital of Hokkaido, a group of volunteers, the Sapporo Sake no Kai (Sapporo Salmon Association), has succeeded in getting returns from salmon that they have been planting in the Toyohira River. This formerly polluted stream is a tributary of the Ishikari, one of the principal rivers of Hokkaido. Salmon hadn't been seen in it for decades prior to a recent campaign to clean it up.

The leader of the group, Dr. Masato Yoshizaki, a professor of anthropology at the University of Hokkaido, is now promoting the organization of other such groups throughout Japan and linking their efforts with those of similar organizations overseas. Volunteer "Come Back Salmon" groups have been organized to plant salmon in rivers in Honshu that have recently been cleared of pollution. Among these are the Chikuma River in Nagano

Préfecture, the Yura near Kyoto, and the Tama in Kanagawa, near Tokyo.

The City of Sapporo and its volunteer salmon association have linked up in common cause with the Thames Water Authority of Greater London, which has recently noted the return of salmon in response to its cleanup of that city's once terribly polluted waterway. The Takara Shuzo Co., Ltd., a major distiller, donates one percent of the proceeds from its whiskey sales to "Come Back Salmon" projects, including one in Vancouver, B.C.

The children of Japan are now getting into the act. An elementary school in Sapporo boasts the "world's smallest salmon hatchery," operated by the "world's smallest hatchery workers." Posters on busses and trains and song skits by choral groups on TV keep the "Come Back Salmon" theme constantly before the public eye. "Come Back Salmon" is an idea that has fired the imagination and enthusiasm of many in this teeming nation. It is being developed with the enthusiasm and intensity of focus characteristic of so much that the Japanese do. Most importantly, the salmon crowding into more and more of Japan's rivers each fall show clearly that the system that the Japanese have developed for rebuilding and managing their salmon resources is working! It will behoove salmon lovers throughout the world to pay attention to how they are doing it.

HOKKAIDO MUSEUM OF HISTORY

Meet in Tokyo for Seafood Conference

The fifth annual International Seafood Conference will convene in Tokyo, Japan, October 25-28, 1982. A forum for fishing industry leaders worldwide, this is the first International Seafood Conference to be held in Asia. The program will emphasize topics relating to the fisheries of the Pacific and their importance in international seafood production and marketing.

Conference sponsors Robert Erkins and Sidney Cohen view Japan as an appropriate site for the gathering. Japan leads all countries in fish catch and consumption. It's the world's largest fish importer (North America is the largest supplier) and ranks sixth in exports. The country's fishing fleet operates in every ocean of the world and is involved in scores of joint venture arrangements.

A key portion of the conference will cover the Japanese industry. Host country leaders will offer information on market distribution practices, consumption trends, industry production, and opportunities for trade. Other tentatively planned subjects are technology and trade policy.

Panel discussions on crab, salmon and shrimp are additional features. Status reports by representatives of other Asian fishing nations will be presented as well.

Conference participants will have an opportunity to visit Tsukiji Market, Tokyo's central wholesale fish market, which handles 3,000 tons of fish and shellfish daily. Also included in the conference program are several receptions, a banquet dinner and optional tours.

Conference dates immediately precede the annual meeting of the International North Pacific Fisheries Commission, also scheduled for Tokyo. The Canton Trade Fair in the People's Republic of China is running during the time of this International Seafood Conference, providing yet another tie-in incentive for seafood marketers.

The International Seafood Conference is co-sponsored by the Erkins Seafood Letter and Seafood Conference International, Inc. Conference headquarters, formerly in Chicago, now are located in Washington, D.C. For further information, contact: International Seafood Conference, 1101 Connecticut Ave., N.W., Suite 705, Washington, D.C. 20036. Telex 89582. □



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Seafood May Prevent Cancer

The nutritional value of seafood, compared to chicken, beef and other animal proteins has been known for a long, long time.

Seafood's reputation has been further embellished by a recent report that seafood may be a cancer preventative.

Seafood is one of the few foods rich in the trace element selenium which has been shown to possess anticarcinogenic properties, says Dr. Gerhard N. Schrauzer, professor of chemistry at the University of California.

Schrauzer claims the typical American receives half or less of the amount of selenium necessary for optimal cancer protection. He cites as

evidence the low incidence of breast cancer in Japanese women; it is only 20 percent of that for women in the United States.

After Japanese women immigrate to the United States, breast cancer rates for second generation Japanese-Americans are as high as those for the general population.

Seafood's long-known nutritional properties make it superior to other forms of animal protein including beef and chicken. As shown in the table below, Pacific snapper has one-third the calories of hamburger, one-third the cholesterol of chicken and provides nearly the same protein in equivalent servings. □

**Nutritional Analysis of Pacific Snapper
Compared to Other Popular Protein Choices**
(Analysis based on a 3½-ounce serving)

	Calories KCal/100 g	Cholesterol MB/100 g	Protein grams	Fat grams
Pacific snapper (or perch)	80	30	19	4
Hamburger patty, raw	270	70	18	10
Chicken breast, raw	117	90	24	5
Cheddar cheese	400	98	25	30
Two eggs	164	500	14	12

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Retailers Unite

A national trade association has been started for seafood retailers. Titled the American Seafood Retailers Association, it will provide a lobby for its members, boost seafood consumption and provide member services to increase profitability, according to its founder, Woodman Harris.

The American Seafood Retailers Association is a trade organization "formed by and for America's seafood retailers, because it's high time we pooled our resources and began to build an image with the American consumer that is responsible, respectable and important," Harris wrote in a mailer soliciting members.

"ASRA will give us organization, recognition and communications, among ourselves and to the American consumer and government," he said. Membership cost is \$195 for the first retail store and \$50 for each additional outlet.

In addition to services, members receive 50 copies of the first issue of the *American Seafood Digest*, a consumer magazine for people who eat seafood and want to know more about it.

Inquiries should be sent to the American Seafood Retailers Association, 67 River Rd., Cos Cob, Conn. 06807. □

Sea Galley Purchase

Sea Galley Stores, Inc., the burgeoning chain of seafood restaurants based in Mountlake Terrace, Washington, recently spent \$4 million on an Alaska seafood processing plant and a Seattle meat/seafood processing and distribution firm. The acquisition of the firms — Pacific Pearl Seafoods' Seldovia plant and General Meats of Seattle — marks the company's first major step toward vertical integration.

Sea Galley management intends to use about 80 percent of the Seldovia plant's production to supply about one-third of its own retail needs. (The firm relies upon a number of Northwest seafood distributors for about 65 percent of the seafood offered in Sea Galley restaurants.) The remaining production from the Alaska plant will be marketed through General Meats to other retail buyers, some of which are Sea Galley's direct competitors.

Sea Galley Stores, Inc., currently owns 44 restaurants in seven western states, Iowa, Virginia, and Maryland. The firm's 1981 sales grew 114 percent to \$49 million — the fourth consecutive year of record growth. □

(continued from page 15)

Attorneys for Arthur Treacher's were stung by the verdict. The chain already has borrowed to the full extent of its roughly \$10 million line of credit, on the assumption that the owing royalties would cover the debt. If Mrs. Paul's subsidiary doesn't get a substantial portion of those royalties soon, it could be forced to default on its loans.

As increasing numbers of ex-franchisees took down their signs and re-opened as identical fast-food fish and chips restaurants (under different names), another sticky legal question arose. "Every franchisee signed a covenant not to compete as part of their original contracts with Arthur Treacher's," says Siedzikowski. "That covenant should prohibit them from selling fast-food fish in or around the same areas for three years from the time they de-franchise, so that Arthur

Treacher's can re-franchise the areas with someone else."

The ex-franchisees, by contrast, argued that, since Arthur Treacher's is now experiencing such dismal cash-flow problems, it couldn't re-franchise the existing areas, anyway. "Why enforce a contract that will only put the existing restaurants out of business?" asks one ex-franchisee.

That question is being heard before a federal district court judge in Philadelphia, as is another one: whether or not the current and ex-

franchisees must pay Arthur Treacher's the back royalties before their cases for non-payment are heard late this year. That last one, quite literally, is the \$14-million question, and it will be decided early in April.

How real is the threat of Arthur Treacher's eventual bankruptcy, if the judge should rule that the royalties aren't due until after each case is heard? "I wouldn't be too pessimistic yet," says Siedzikowski, "but we can never rule it out." □

— Scott W. Forslund

Juggling at Ralston Purina

Ralston Purina, the giant food conglomerate based in St. Louis, has shaken up the executive suite in its Van Camp Sea Food Co. in San Diego.

Richard C. Atchison has been replaced as president by Tony Ingram who was formerly in charge of production at Van Camp's modern tuna cannery on the San Diego waterfront. Peter Buchan was elevated from vice president of governmental affairs to executive vice president.

Mr. Atchison has assumed a new position as president of M.C., the Mitsubishi Corp.'s new tuna processing and marketing company in Puerto Rico. The cannery there was formerly owned by Sun Harbor.

To help assure a constant supply of raw tuna, Ralston Purina furnishes financial assistance to independent fishermen and participates in the ownership of purse seiners. The company arranged the purchase of ten purse seiners which switched to the Mexican flag in 1980, becoming the fishing arm of Pescatum, S.A. de C.V., a Mexican fishing company which was 44 percent owned by Ralston.

However, when the U.S. government placed an embargo on Mexican tuna imports because Mexico had seized and heavily penalized some American tuna seiners, tuna could no longer be trucked from Ensenada to Van Camp's San Diego plant. The Mexican company was disbanded and the seiners changed flags back to the Stars and Stripes. Van Camp has the boats. □

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Frionor: Marketing Arm for Norway's Seafood



Frionor's freezing plant in New Bedford, Mass., is conveniently located on the waterfront, enabling the freezer vessel, *Norcan*, to unload raw materials from Norway directly into the facility. Pictured in the left foreground is the office of Frionor Norwegian Frozen Fish Ltd. A production facility, freezer, dry storage areas and loading docks occupy the remainder of the complex.

The seafood industry faces marketing challenges in the 1980s which may make or break individual companies. From time to time we will review the marketing approaches and structures of companies, or, in this instance, a cooperative approach to worldwide marketing. The following article is based on a paper by Leiv Birkeland, Sales Director, Frionor, Oslo. It was given at the management of national fishery development workshop, University of Hull, England, July 6-17, 1981. Ed.

Frionor markets frozen sea products, mostly groundfish fillets or products derived from fillets or fillet blocks. Started in 1946, Frionor has a turnover exceeding \$200 million. It exports 95 percent of its production and is jointly owned by 120 independent frozen fish producers.

Frionor grew fast after the war, doubling its physical turnover every five years in the 1960s. Since then, the familiar European problems of over-fishing have slowed growth, although turnover value, if not tonnage, has been increased by marketing higher

value products and generally watching the markets.

Frionor acts as a controlling force for 120 freezing plants along Norway's coast. Twelve are owned by fishermen's cooperatives, five by government and 103 by private organizations. Frionor itself owns only the label, the international marketing facilities and some processing plants which process the members' raw material.

Individual members may well do more than freeze fish. Some supply fuel or equipment to fishermen; the larger ones run trawlers, although most rely on local independent fishermen for their raw materials. Plants may produce other fish-based commodities, but in one respect all are common: their groundfish fillet products are sold through Frionor.

The company centrally coordinates policy, which relieves members of a great deal of worry and expense. Marketing policies — sales, pricing, advertising, shipping — are taken care of, along with quality standards and production planning.

Marketing is expensive. Frionor

has built up associated companies in the USA, Sweden, Switzerland, the UK and Germany, with exclusive agents elsewhere. Through these outlets, Frionor markets its own brand label, both retail and foodservice, and some private label products, often in parallel with the Frionor brand. The company also markets industrial raw products, such as blocks and fish products for smoking.

In its early days the company's role was to market its members' production, either consumer packed or foodservice fillets, blocks and frozen raw material for further processing abroad. The company has now moved on and still markets its members' finished products, but it also takes semi-finished material and finishes the job in its own plants. There are three main plants — two in Norway and another in New Bedford, Mass.

To give the company strength and the full product range which makes it cost-effective, it had to branch out and take products from nonmembers. These might include fish species unobtainable in Norway and meat, vegetables, desserts, etc., which completed the product range. In Norway, distribu-

tion costs make it uneconomical to handle less than a full range of frozen foods.

When it comes to consumer affairs, Frionor takes responsibility for the product rather than the individual plant. Frionor develops new products, specifications, packaging, and gives technical assistance to all plants. The sales organization is totally in Frionor's hands, and it decides all policy matters.

The members finance their own operation and are paid a fixed number of days after shipment, irrespective of when the product is actually sold to the customer.

With changing market conditions, it may happen that some products lose money or the same product may be much less profitable in one market than another. This is of no great consequence, as long as the average profitability of the full range is acceptable. On the basis of total profitability, Frionor calculates the prices to be paid to producing plants. These figures affect the attitude the company takes in negotiations with the fishermen's union on fish prices.

There are quarterly negotiations and the prices agreed upon remain fixed for several months. The company's policy is to pay the highest possible prices, keep them stable, take the catch in all but exceptional circumstances, and to impress upon the fishermen the importance of catch quality. Just now there is a shortage of conventional species, so fishermen are encouraged to go for the less exploited species.

For fishermen, the advantages are that the consortium encourages the orderly and continuous marketing of their fish and increases price stability. The rapid price variations, so common because of weather, supply and demand, etc., are obviated and fishermen can negotiate on the basis of average market prices.

Freezing plants can concentrate on production, and, as their targets are fixed by Frionor, they can regard their production as sold at prices which are reasonably stable. Quality control standards are fixed and technical assistance is available.

For its part, the consortium takes considerable risks and has to cover market and currency fluctuations, bad debts and the holding of stocks which have been paid for but not sold.

The system has been working well for 35 years. Obviously, there are pitfalls, and close communication between the company, its members and fishermen is essential.

— Michael Moore

Forecast for 1990: Beef Prices To Soar, Poultry Takes Over

Two private food economists predict that by 1990 a major shake-up of the market will move poultry into first place for meat by volume of sales. Dr. Howard Madsen and Donald M. Senechal, vice presidents of Agri-Commodities, Inc., of North Andover, Mass., foresee major dislocations in the market as choice steers more than double in cost by the end of the decade.

The economists did not include seafood in their market analysis, but data from the U.S. Department of Commerce and from Business Trend Analysts, Commack, N.Y., indicate that price increases for seafood in the next eight years may be lower than those for beef, but higher than those for poultry.

The price for choice steers (live animals) is expected to increase from the current value of \$62 per hundredweight to \$150 per hundredweight in 1990, according to Agri-Commodities. During the same time, broilers, dress-

ed and ready to cook, are expected to increase from \$45 per hundredweight to \$75 per hundredweight, giving a cattle-to-broiler price ratio of 2:1 by 1990.

Madsen and Senechal base their analysis on predictions for 18 cost variables in steer and broiler operations. Among the cost advantages broiler operations should enjoy over beef is the superior feed-to-meat conversion for poultry.

There are no data for seafood that are directly comparable to those offered by the economists. However, Business Trend Analysts predict that the wholesale price of U.S.-produced frozen fillets will climb from \$1.35 per pound in 1980 to \$2.57 per pound in 1990, an increase of 90 percent.

If Madsen and Senechal are correct in their predictions of soaring beef prices, there may be an opportunity for other animal protein sources, including seafood, to increase their market share. □

Product	1978-80	1983-85	1988-90	% Change
Choice Steers (Omaha)	\$62	\$92	\$150	+142
Hogs (7-city markets)	\$43.50	\$67	\$110	+152
Broilers (9-city)	\$45	\$57	\$ 75	+67

Product	1980	1990	% Change
Fillets	\$1.35 per lb.	\$2.57 per lb.	+90

Predictions for steers, hogs and broilers are by Agri-Commodities. Fillet predictions are by Business Trend Analysts.

Shelf Life: Enzymatic Preservation

An enzymatic method for preservation of seafood, using a glucose oxidase solution, has been introduced by NutriSea Foods, Inc., Narragansett, R.I.

The results of laboratory testing of glucose-oxidase-treated fish were first reported at the 1981 Institute of Food Technologists convention in Atlanta, Ga. Subjective and objective testing revealed a 67 percent increase in shelf life of refrigerated treated fish over refrigerated controls. Estimates place the cost of treating the fish at a few cents per pound.

The enzyme utilized by NutriSea Foods is a food-grade commercial glucose oxidase/catalase preparation manufactured and marketed by Ferm-

co Biochemicals, Inc. After mixing the enzyme with glucose and water, the solution is applied to the surface of the fish by means of a dip, by storage in enzyme ice, or by immobilizing the enzyme in algin blankets, which are then used to cover the fish.

Application of glucose oxidase inhibits growth of bacteria that degrade the slime, skin and scale layers, thus delaying spoilage. Off-odors associated with organisms found in the skin and scales are also suppressed.

The concept of enzymatic preservation was developed by Dr. Cynthia Field, a biochemist, and Ms. Lauren Haft, a microbiologist, at the University of Rhode Island's food science laboratories. □

Another Source

The Market for Canned, Frozen and Cured Seafood, Business Trend Analysts Inc. 2171 Jericho Turnpike, Commack, NY 11725. September, 1981; 229 pages; \$395.

Business Trend Analysts is offering a well-researched, thorough analysis covering all aspects of the seafood industry, with the exception of fresh fish moving through local markets (difficult to document because of lack of information). For the investor checking out the seafood market, the report is an excellent tool, compiling statistics available from government and private sources, analyzing past trends and forecasting growth rates by product category for the coming decade.

The report paints a bright picture for the seafood industry. BTA has similarly examined processed meat products, dairy products, health foods and many more. Overall sales for seafood are projected to reach \$12.4 billion in 1990 from a level of \$4.3 billion in 1980, an annual increase of 11.2 percent.

Growth rates are projected for major categories of seafood for the

year 1990. Volume and dollar predictions are given for total seafood, fresh and frozen (broken down by fish sticks, fish portions, fillets and steaks), breaded shrimp, canned seafood (tuna and salmon), and cured seafoods. A multitude of tables back up the projections. The report begins with an overview of the industry, looking at major company growth, legislative history and foreign fishing.

Supply of seafood products in the United States, both domestic production and imports, is examined mainly through tables from the National Marine Fisheries Service. Price trends are analyzed vis-a-vis trends in other protein sources and overall supply, again backed by available data. A chapter on distribution breaks down sales through merchant wholesalers, manufacturers' sales branches and merchandise agents and brokers. A look at past trends in imports and exports is accompanied by tables. Aquaculture's role and potential are discussed, with growth rates projected into the '80s.

An accounting of consumer brand preferences provides market shares of canned tuna producers and producers

of frozen prepared seafood. Included are results of surveys taken by newspapers in Denver, Milwaukee, Chicago, Seattle and Des Moines on consumer preferences for brands of canned tuna, canned salmon and frozen seafood.

The importance of demographic trends in marketing seafood to consumers is discussed, and consumption trends by region, income, household size, education and age are summarized. A chapter on advertising traces the increases in expenditures over the past five years, detailing approaches and promotions by major companies. A table ranks the media expenditures of eight leading companies. Discussions of recent developments within 11 major seafood producers are given, as well as financial profiles. For example, the discussion on General Mills focuses on the Gorton division, listing products and trademarks. The history of Gorton's development is traced, analyzing the criteria behind the company's change from reliance on a domestic supply to an imported one.

This exhaustive report concludes with a seafood industry company directory.

SPANNING THE PACIFIC



Marine Resources Company

- Dedicated to the development of a viable West Coast bottomfish industry.
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BEST AVAILABLE COPY SOLUTIONS

1. Ice by the ton

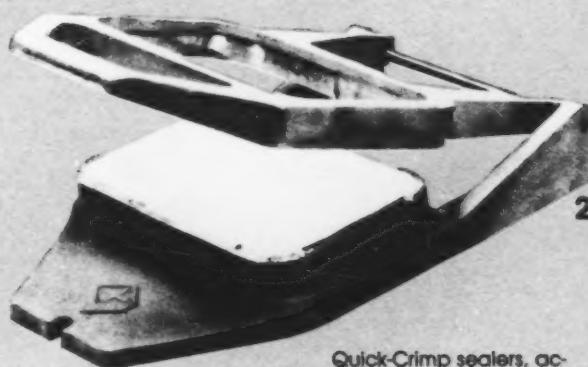
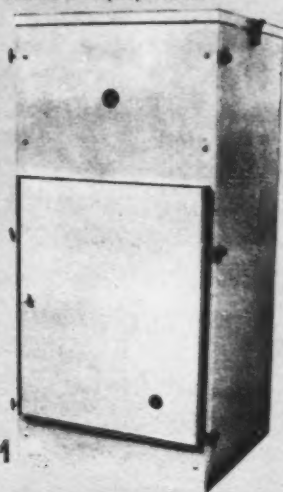
An ice machine that makes up to 2000 lbs. (907 kg) per day of saltwater ice from seawater on shore or at sea is now available from Liquid Carbonic Corporation, Chicago, Ill., a subsidiary of Houston Natural Gas Corporation.

New features of the Seafarer® TE-2 ice-making machine include a seawater centrifugal pump, cupronickel tubing used for compressor cooling, an externally hinged access door to the control center, and a stainless steel evaporator.

Seafarer machines are described as producing

curved ice that "nestles around a catch," reducing its temperature quickly and keeping it fresh. The manufacturer states that little maintenance is needed for the units, as their freezing zones contain no moving parts.

Circle number 49 on the Reader Inquiry Card.



2. Finger-saving device

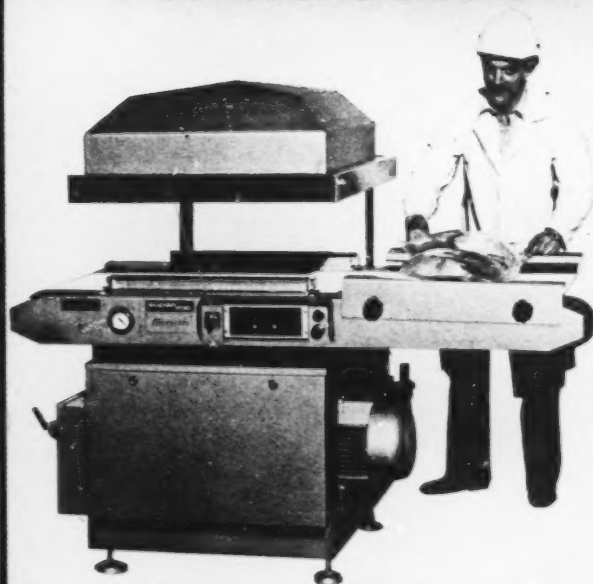
A new line of sealers that may save fingers and reduce fatigue is being promoted by Plus Container Machinery Inc. (PCM), a subsidiary of Ekco Products, Inc.

Quick-Crimp sealers, according to the manufacturer, are easy to operate and eliminate cut or bruised fingers, labor fatigue and pre-crimping.

The sealers come in seven sizes for closure of vertical-flange oblong and round aluminum foil containers, with either flat board lids or plastic dome covers.

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How to Vacuum Package For Increased Sales and Profits.



The Smith SuperVac GK 170-B features automatic operation • stainless steel construction for easy clean-up • bi-active sealing for positive seals.

For wholesale and/or retail, vacuum packaging provides a more appealing package and product. Something that your customers will appreciate.

At the same time, you will be preventing weight loss due to purging and dehydration. Freezer burn is eliminated. The product comes out of the freezer the way you put it in, every time.

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3. No more water worries

Atlantic Bridge Company Ltd. (ABCO), Lunenburg, Nova Scotia, has unveiled a new dry discharge system for its line of pneumatic fish unloaders.

Central to the new development is a dry discharge valve compatible with most of the more than 80 ABCO Air Unloading Systems around the world.

The new system has been designed, says the manufacturer, specifically for those markets demanding both a high-quality catch and a dry product. As water is no longer required for produc-

ing a vacuum seal, water supply and associated environmental problems are eliminated.

Features of the new valve, according to ABCO, include gentle handling, product range from sardines to 60-pound North Atlantic Cod, uninterrupted discharge flow, and the ability to handle any volume of product that can be fed into it. The unit is automatic and self-energizing, requiring no external electric or hydraulic hookups.

Circle number 1 on the Reader Inquiry Card.



4. Electrified oxygen

An ozone generating machine is being marketed by Pacific Ozone, Inc., of Seattle, for a variety of uses in the seafood industry.

Ozone generators are being used to eliminate odor and retard bacterial growth in egg rooms and other areas of fish processing plants. Ozone generators in refrigerator vans help prolong the shelf life of fish during transport. One such machine is the Sonozaire, manufactured by Howe-Baker Engineers, Inc., of Tyler, Texas. The smallest unit, sufficient for use with a van's refrigeration unit, measures approximately 22" x 24" x 9", is portable or can be wall-mounted, and costs \$595.

The sanitizing effects of ozone have other potential

applications that are currently under study for on board, in the plant and during transport of fish. Ozonized water can be used as a sanitizing washdown. Ozone ice can keep fish fresh nearly twice as long as untreated ice, according to Bill Nelson, president of Pacific Ozone. Ozone can be bubbled into the water of crab tanks to keep crab alive longer by eliminating the ammonia formed and providing oxygen.

Ozone is oxygen (O_2) that has been electrified so that it has a third atom (O_3). Ozonized water has been used as a purifying agent in many European countries for more than 50 years.

Circle number 63 on the Reader Inquiry Card.



5. Small scaler or large

The Simor Automatic High-Speed Fish Scaling Machine has been designed to do a clean, efficient job of descaling most species of fresh- and salt-water fish, according to the manufacturer, Simnar, Inc., Windsor, Ontario.

There are models available for descaling fish from 4 oz. to 16 lbs. and flounder-type fish up to 12" wide. For the small processor, Simnar has several models available, called the Simor Half-Machines. Fish must be passed through these machines twice in order to scale both sides. The Half-Machines have all the features of the complete Simor Scaler, with an output of approximately 85 fish per minute (depending on the size of the fish).

For the medium to large

processor, Simnar offers a line of Simor Scalers to handle daily production of from 6000 lbs. to 100,000 lbs., depending on the size of the fish.

The scalers are suitable for installation on board fishing vessels as well as in factories ashore. Mounted on casters, the machines may be moved easily.

A special feature of the line, according to the manufacturer, is a fingertip mechanism requiring only seconds to make adjustments for different sizes of fish. The machine is powered by electric motors, which are thermally protected and will shut down automatically if overheated.

Circle number 80 on the Reader Inquiry Card.

SOLUTIONS



6. It's agreed

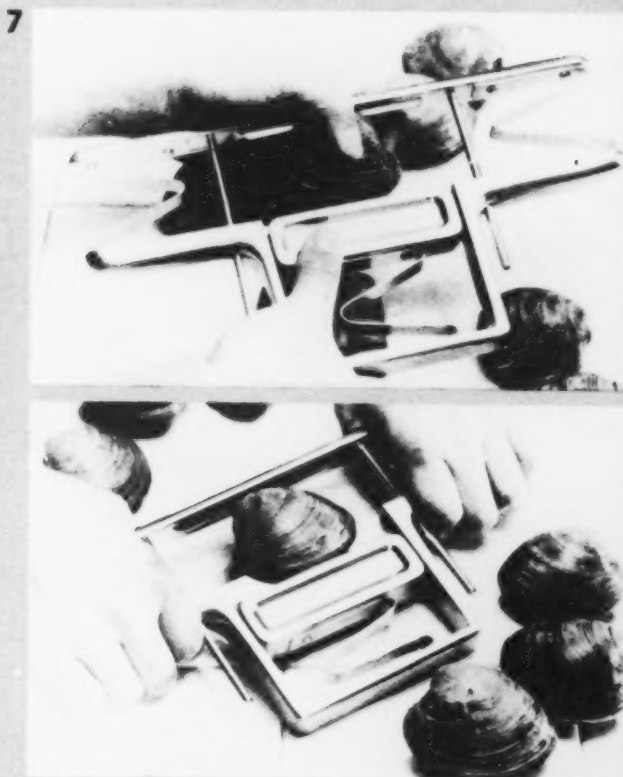
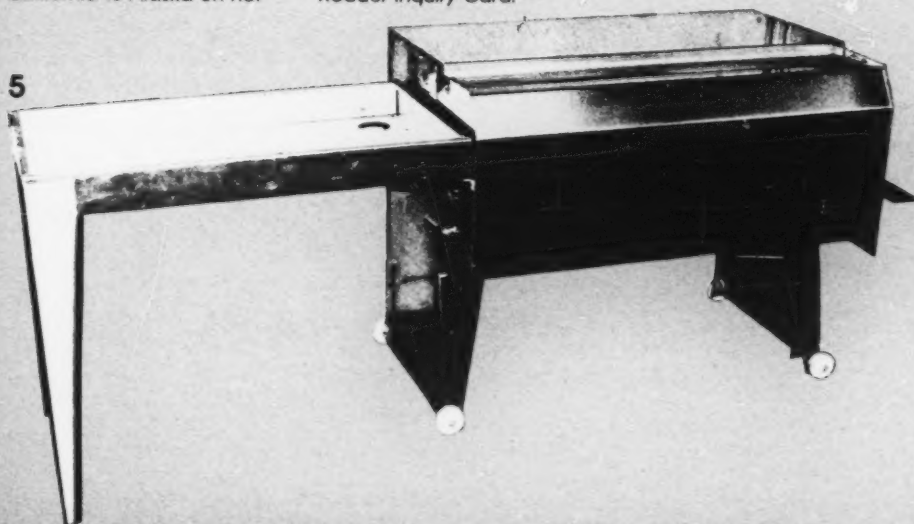
Flohr Metal Fabricators, Inc., Seattle, Wash., and Bartlett Metal Products Ltd., Vancouver, B.C., recently agreed to have Flohr Metal Fabricators build the Bartlett-designed herring bagging machine and other seafood processing equipment for both the United States and Canada.

The bagging machine, capable of up to 20 tons per hour, is of all-aluminum construction. There are over 70 units in use from southern California to Alaska on not

only herring, but also squid and other small bulk-packed fish products. In addition to the bagging machine, Flohr Metal Fabricators offers a complete herring packing system consisting of a tote dumper and inclined wash conveyor with a water bath hopper and spray nozzles.

Flohr Metal Fabricators will continue to manufacture its herring boxing system, which is based on weight dispersion rather than volume.

Circle number 33 on the Reader Inquiry Card.



7. Pop goes the clamshell

Clam-A-Lot, Inc., of Ocean-side, Cal., has introduced a new clam opener called Clam-A-Lot. The manufacturer claims it greatly reduces labor in opening clams and is completely safe to operate.

When the clam is inserted in the device, it is locked into place. To open the clam, the operator squeezes the handles firmly. Since Clam-A-Lot operates only by squeezing both handles, there is no chance of the operator's getting his fingers caught under the blade.

The blade pops the clamshell open in seconds, cutting muscle, not meat. Even if the clam has been disturbed and has clammed up, the device will still work, says the manufacturer.

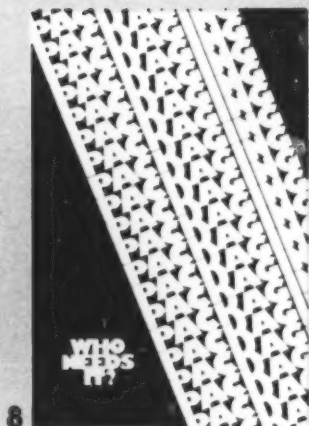
Clam-A-Lot features stainless steel and aluminum construction and comes with an extra blade.

Circle number 22 on the Reader Inquiry Card.

8. Who needs it?

"Packaging . . . Who Needs it?" is a 14-page booklet outlining the history of packaging and its significance in today's marketing systems. The booklet, written in a non-commercial style and featuring four-color illustrations, is available free in limited quantities from the Cryovac Division of W.R. Grace & Co., Duncan, S.C.

Circle number 37 on the Reader Inquiry Card.



8

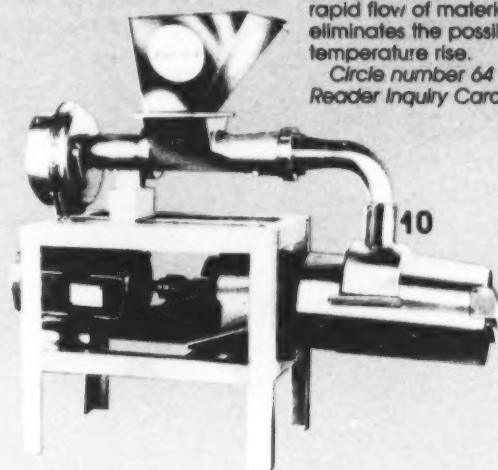
10. A filter feed system

The Stephen Paoli International Corporation, Rockford, Ill., has introduced a new forced feed system, the No. 20-7, to replace the Paoli 20-8. The new system offers the same capacity and performance as its predecessor, but the machine has been manufactured in a more compact overall size to fit

smaller processing areas.

The automatically fed poultry or fish is forced into the separator without the attention of an operator. Another benefit, according to the manufacturer, is the reduced possibility of accidental damage to the separator from entry of foreign material. The more rapid flow of material also eliminates the possibility of temperature rise.

Circle number 64 on the Reader Inquiry Card.



9. Only the name has changed

TMX Shipping, which began 40 years ago as Seaport Shipping Co., Seattle, Wash., is now presenting all its transportation services and offices under its single new name.

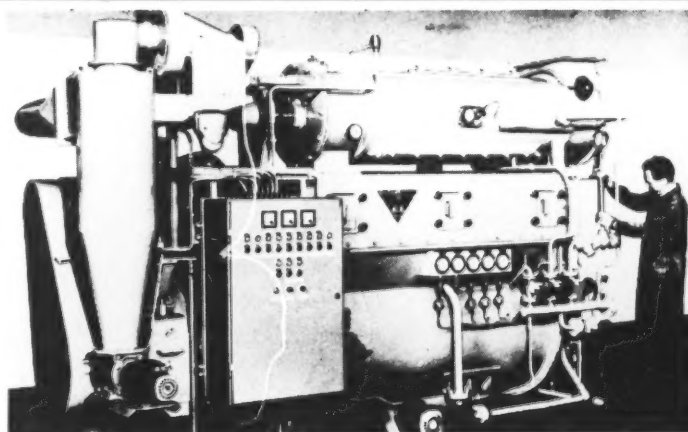
TMX Shipping offers ocean freight forwarding, chartering services, project shipping,

import services, air cargo, insurance placement, and tariff quotations. Branch offices are located in Tacoma, Wash.; Portland, Ore.; Morehead City, N.C.; and Vancouver, B.C.

Circle number 88 on the Reader Inquiry Card.

FISH WASTE OR CRAB WASTE PROBLEMS?

You find ATLAS-STORD reduction plants all over the world. In USA, Canada and New Foundland there are more than 30 reduction plants with ATLAS-STORD equipment.



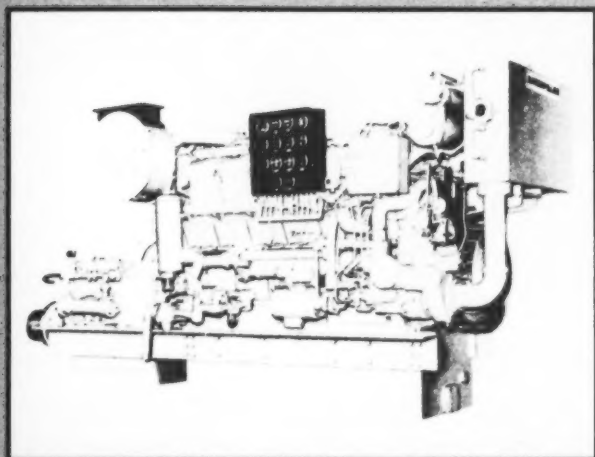
ATLAS-STORD offers you simple, economical and reliable equipment for reduction of waste and industrial fish. We undertake complete planning, delivery, supervision or complete installation. Our after service is well known world wide. In North America we have representatives and spare part stocks in New Foundland, the Maritimes, New York and at the West Coast.



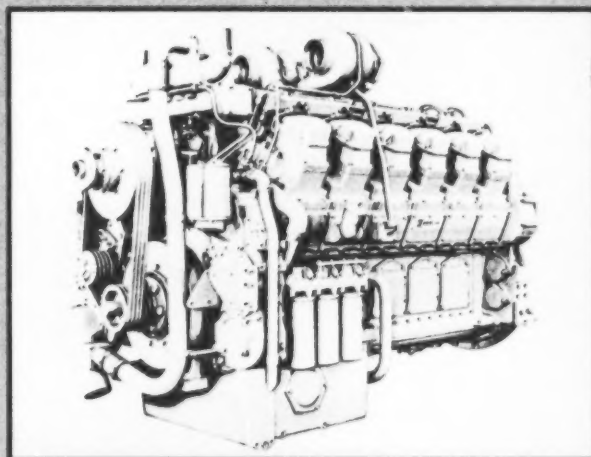
Stord Bartz a.s

Bergen — Norway. Tel.: (05) 21 10 30, telex: 42051

New York: Stord Bartz Americas, Inc.
1 North Broadway
White Plains, N.Y. 10601
Tel.: (914) 949-8588



12



11. Live on arrival

Dye Plastics, Inc., of Seattle, Wash., has developed a new insulated shipping container, previewed for the first time at Fish Expo.

The "Air Fresh" container is designed for shipping fresh and live products via air freight and is constructed with a double-wall plastic

shell with foam insulation. It will nest 70% with lid when empty, which means savings in return freight costs.

This E-type box is built to air cargo specifications and measures 29" x 42" x 25".

Circle number 29 on the Reader Inquiry Card.



11

12. High-speed cats

The NC Machinery Co., Seattle, Wash., has introduced a new line of high-speed Caterpillar engines, the 3500 Series.

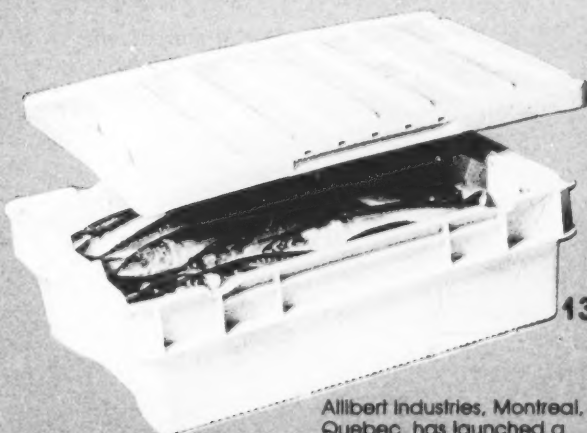
According to the manufacturer, the three versions of the 3500 Series engines, rated at 800 hp to 1600 hp, were designed with an eye to simplifying procedures and reducing service time requirements.

The Cat 3512 Marine Engine, rated at 1200 hp, features a one-piece

cylinder block, individual cylinder heads, a one-piece crankshaft, double-cooled pistons, an angle-bolted connecting rod, and a direct injection fuel system.

Designed for ease of maintenance, the engine has an externally mounted oil pump and large inspection openings. Service to the fuel filter system is coordinated with oil changes.

Circle number 59 on the Reader Inquiry Card.



13

13. From sea to shore

Allibert Industries, Montreal, Quebec, has launched a new line of onboard fish containers. The sea-to-store boxes will stack, nest, and hold two layers of ice with outside drainage. The covers have no-slip interlocking features.

Circle number 8 on the Reader Inquiry Card.

"We Work Our Tails Off"

BUDRUSS, INC.

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Circle number 16 on the Reader Inquiry Card

SBR / SPRING 1982 107

SOLUTIONS

14. Better where it's wetter

A new power strapping machine designed for high-volume carton-strapping under extreme "wet room" conditions has been added to the product line of Signode Corporation, Glenview, Ill.

The Signode Model ML3A-DD has a galvanized frame and stainless steel side panels to resist the deteriorating effect of a wet environment.

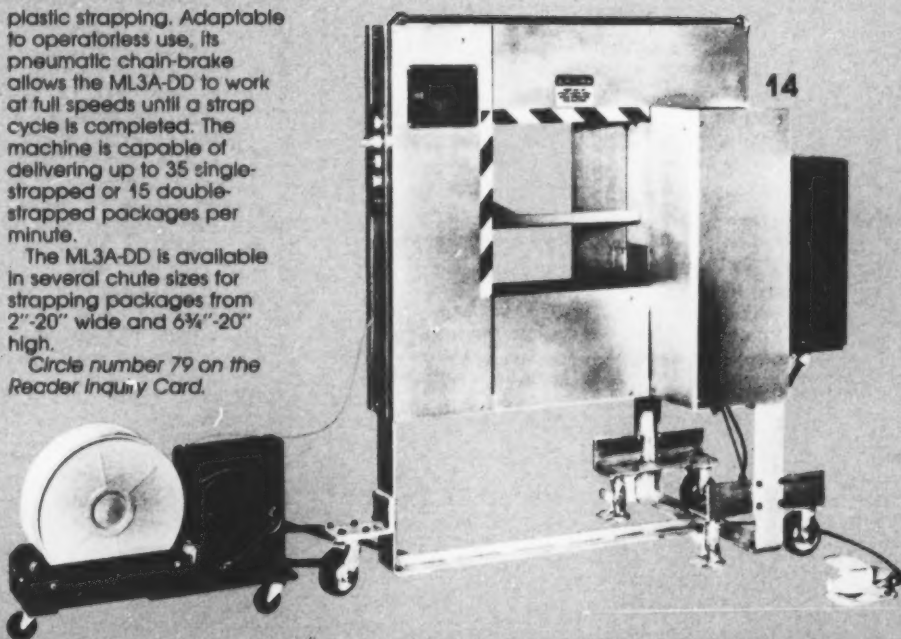
According to Henry G. Schure, Signode product development manager for plastic strapping, the ML3A-DD offers both top and side compression to reduce overpacking and to "square" packages for steady stacking. It can exert from 150 to 375 lbs. of side (vertical) compression and 95 to 250 lbs. of top (horizontal) compression.

The machine automatically applies and tensions Signode's lowest-cost 1/4"

plastic strapping. Adaptable to operatorless use, its pneumatic chain-brake allows the ML3A-DD to work at full speeds until a strap cycle is completed. The machine is capable of delivering up to 35 single-strapped or 15 double-strapped packages per minute.

The ML3A-DD is available in several chute sizes for strapping packages from 2"-20" wide and 6 1/4"-20" high.

Circle number 79 on the Reader Inquiry Card.

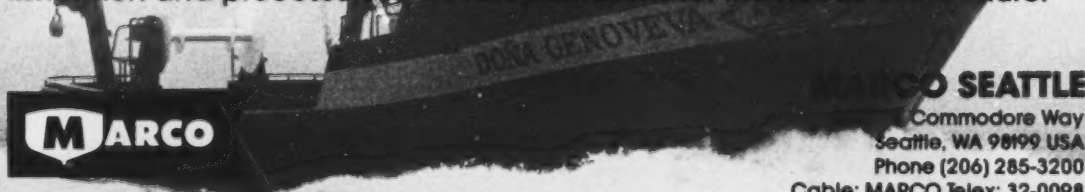


MARCO LEADERSHIP IN FISHING

For more than a quarter century, MARCO has been a fishing industry leader, introducing revolutionary gear like the Puretic Power Block, the King-Hauler pot block and KingColler line collar, the Capsulpump line of fish pumps, the Eggstractor salmon roe remover, and the TiLiner mechanized longline fishing system, to mention a few. We've also designed and built some of the world's finest fishing vessels, from the HiNetter 32-foot gillnetter series to sophisticated vessels like the STORM PETREL and AMERICAN NO. 1.

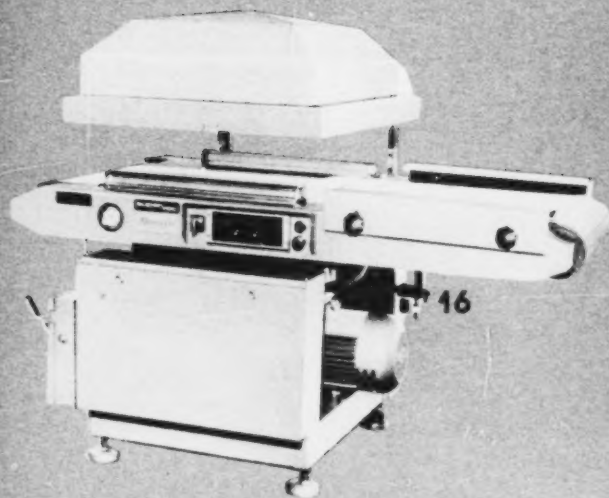
Innovative MARCO achievements like these have been based largely on ideas and proposals from people within our industry. We've combined many of those good ideas with our own expertise in engineering, manufacturing, shipbuilding, and worldwide marketing to produce these outstanding products to the fisheries.

Now, more than ever, MARCO continues its commitment to working with fishermen and processors to develop solutions for the needs of the future.



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Commodore Way
Seattle, WA 98199 USA
Phone (206) 285-3200
Cable: MARCO Telex: 32-0098

SOLUTIONS



16

15. New from down under

Wilbur-Ellis Company, San Francisco, Cal., has added S.E.L.F.-brand (South East Lobster Fisheries), cooked Australian lobster meat to its line of frozen and fresh seafoods.

The new plate-ready product, its promoters state, is

ideal for cold salads as well as for hot entrees, such as lobster Newburg, Thermidor, or Mornay and lobster crepes. The Australian product is priced so that it may be used profitably as an extender, but the product is also suitable for use by itself,

16. Pouch packager

Smith Equipment Co., Inc., Clifton, N.J., is now marketing the new Supervac 170-B Conveyorized Chamber Vacuum Packaging Machine for pouches and bags. The semi-automatic operation is intended to provide labor efficiency for the medium-sized wholesaler or processor.

According to the manufacturer, the machine paces the operator and eliminates fatigue. It features automatic high-speed cycling and will vacuum and seal from two to eight packages at a time.

The operator loads the

pouches and places them on the infeed conveyor. The GK 170-B automatically transports the packages to the chamber. After the vacuum is drawn and the packages are sealed, they are automatically removed to cartons via the outfeed conveyor. The machines are equipped with upper and lower seal bars that permit the packaging of overlapped packages as well as wet products.

Circle number 82 on the Reader Inquiry Card.

says Wilbur-Ellis.

S.E.L.F.-brand lobster meat comes in ten 2½-pound vacuum packs per case. Each block is quartered for ease in handling.

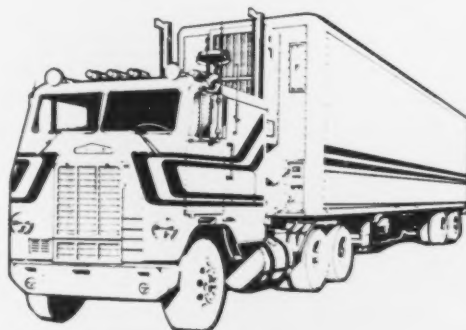
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Specializing in fast, on-time transportation of fresh and frozen seafood products from points in Washington and Oregon to California markets.

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- Serving packers, brokers, and distributors of all seafood products in Washington, Oregon, and California

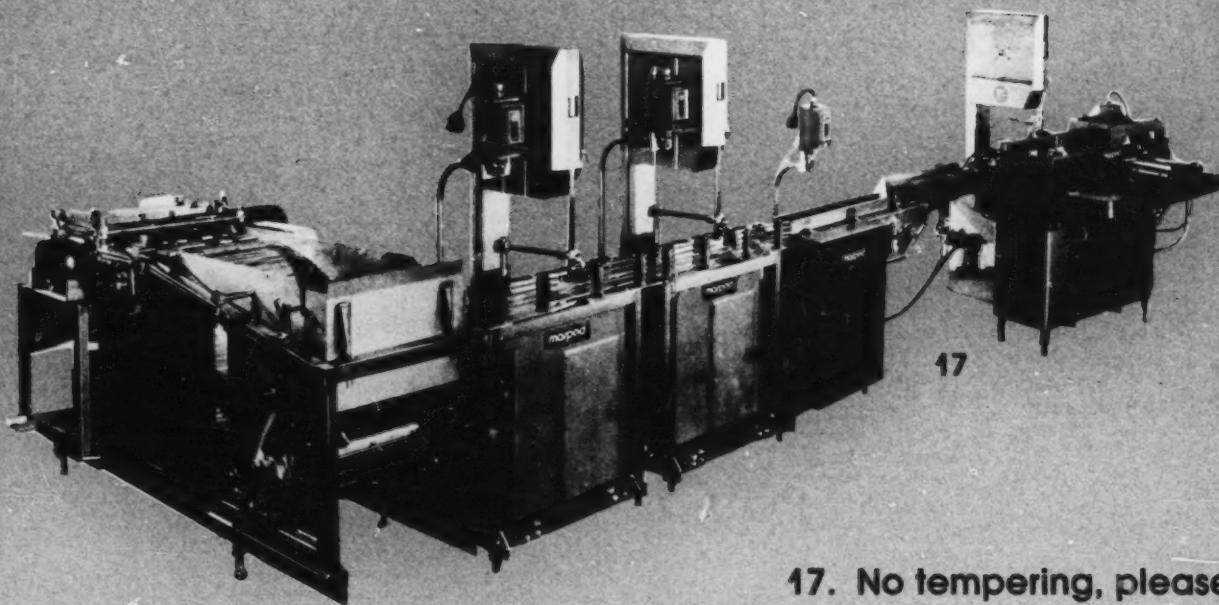


206 748 8877

Sorenson Transportation Co., Inc.
632 N.W. Averill St., Chehalis, WA 98532

— Serving the Seafood Industry Since 1970 —

SOLUTIONS



Lower operational cost is a key benefit of using the Marped Automatic Frozen Food Block Cutting System, says the system's manufacturer, Marped Engineering Co., Inc., Winchester, Mass.

The entire line, whether producing 800 or 6000 lbs. of product per hour, needs only one operator to feed

the blocks into the modular system. No personnel is needed between the feed end and the delivery end of the cutting system.

Frozen untempered fish blocks are fed directly into the Model 600 Block Cutter, which saws the blocks into logs. The logs pass automatically to the Model 610

Transfer/Pusher, which moves the logs through the Model 620 Modular Saws. The logs are cut into a predetermined number of slabs for automatic and simultaneous delivery to the Model 640 Stick/Portion Cutter, which separates, orients and feeds the slabs through a cutting chamber to be cut into sticks

or portions. The sticks/ portions are delivered in spread-out fashion directly onto the batter/breader belt.

Because the blocks are not tempered, says Marped, a quality product with high yield is assured.

Circle number 52 on the Reader Inquiry Card.

17. No tempering, please

18. Under new management

Envirotainer Corporation, Los Altos, Cal., has assumed management of the patented refrigerated "PAX" container from PAX Systems.

The air cargo containers are available in three sizes: LD3, LD5/11, and LD7/9. They incorporate a patented dry-

ice cooling system that maintains a uniform temperature in the container for up to five days. The containers have been used in the shipment of over 200 million lbs. of fresh and frozen seafood around the world.

Envirotainer has instituted a

new rate structure that eliminates demurrage. Envirotainer has also installed a toll-free WATS line: (800) 227-8298 for customer and potential customer inquiries.

Circle number 30 on the Reader Inquiry Card.

19. One-stop shipping

American Dry Ice Corp., Seattle, Wash., has introduced a one-stop packing and shipping service for perishables, featuring fresh and frozen packs.

ADI describes the service as using approved shipping containers with poly liners and styrofoam-insulated lining. Sizes vary from one-

half cu. ft. to 70 cu. ft. Exterior lettering identifies contents as perishable or frozen. The coolant used is dry ice or gel pack.

The packing and shipping service is available in Seattle, Portland, Boise, and Manteca, Cal.

Circle number 9 on the Reader Inquiry Card.

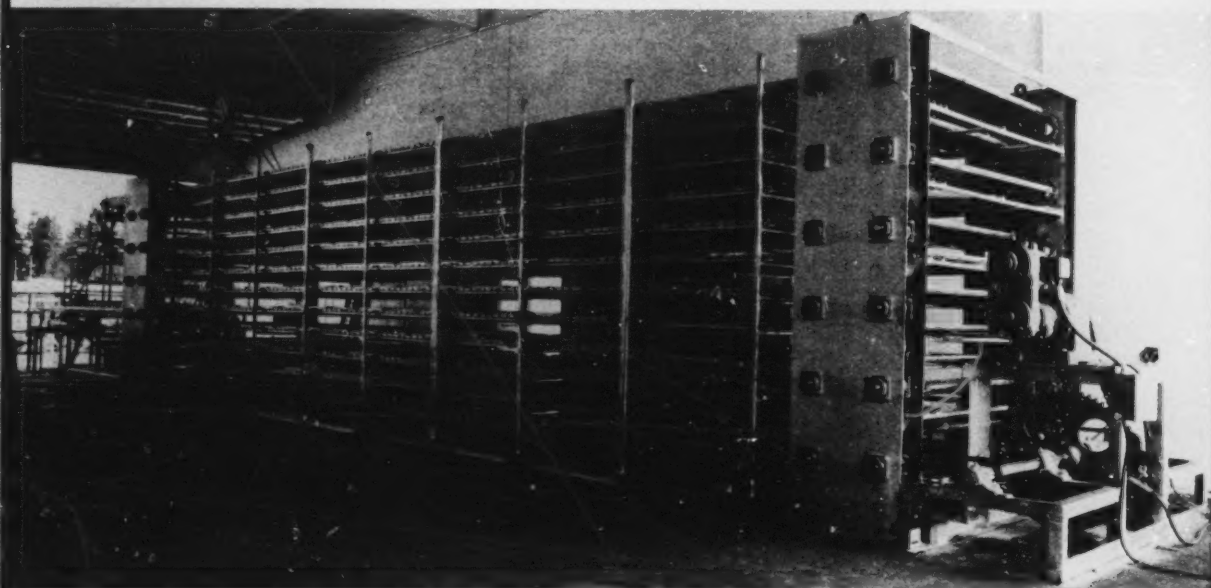


C & B, Inc. Helps You Cut Costs...



**...WITH THE LINEAR CONVEYOR FREEZER
ONE MAN LOADS 4,000 LBS. PER HOUR**

- Continuous Salmon Freezers ☐
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Labor — handling — power — raw product. All are direct costs that can make your bottom line black or red.

C & B, Inc. has the equipment and the design expertise to make your bottom line black. Our linear conveyor cuts labor and handling to the absolute minimum. One man loads this freezer at a rate of 4,000 lbs. per hour. (salmon)

**OUR OTHER SYSTEMS
ARE EQUALLY ADVANCED.**

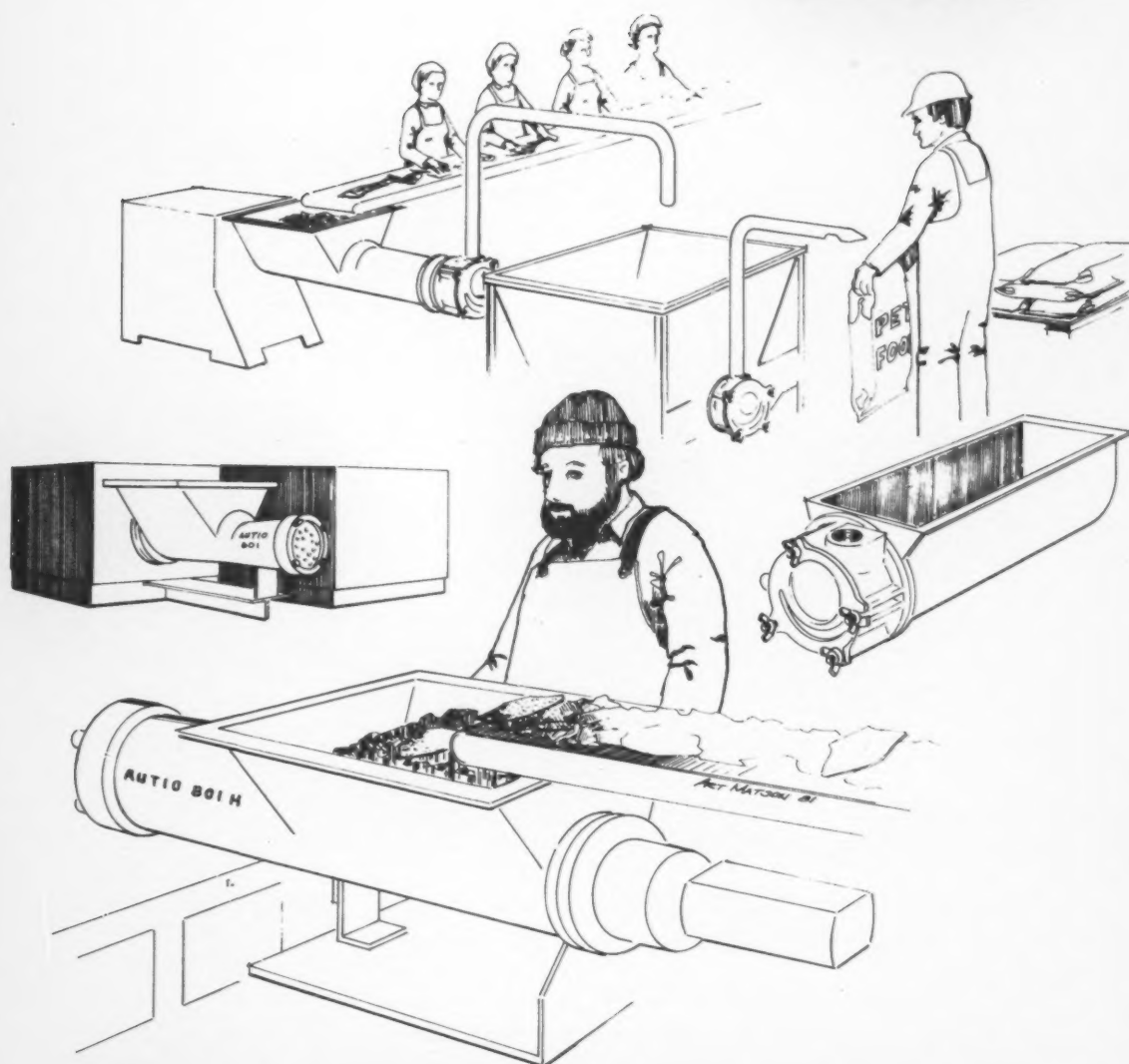
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ACHILLE PALADINI SEAFOOD CO.

500 Mendell St., San Francisco, CA 94124
415-821-1900

Parent Company: Achille Paladini Corp. Ltd.

Personnel: Achille Paladini, Pres.

Plant Locations and Capabilities: San Francisco: distribution plant. Santa Rosa: processing plant. All types of fresh/frozen/canned seafood.

Brand Packed Under: Paladini and Seal Rock Fisheries

AERO TRADING CO., LTD.

8592 Fraser St., Vancouver, B.C., Canada V5X 3Y3
604-327-6331 • Telex: 04-508687

Personnel: M. Yamagishi, Pres.; Harry Livingston, Sales Mgr.

Plant Locations and Capabilities: Vancouver, B.C.: fresh/frozen salmon, herring, halibut, prawns, shrimp, abalone, bottomfish; canned salmon.

ALASKA FAR EAST CORP.

103-200 W. Thomas Bldg., Seattle, WA 98119
206-285-2153 • Telex: 32-1147

Parent Company: Trans-Asiatic Inc.

Personnel: Joseph Weber, General Mgr.

Plant Locations and Capabilities: Naknek, AK: fresh/frozen herring, herring roe on kelp, salmon, salmon roe.

Brand Packed Under: TAI

ALASKA FOOD COMPANY, INC.

5501 6th Ave. S., P.O. Box C-81411, Seattle, WA 98108
206-767-9544 • Telex: 329524AF

Personnel: George Dickson, Pres.; John B. Martin, Sales Mgr.

Plant Locations and Capabilities: Kodiak, AK: fresh/frozen Alaska pollock, Alaska cod, crab (king, tanner, Dungeness), Alaska shrimp, halibut, sablefish, scallops, salmon.

Brand Packed Under: Alaskan

ALASKA FRESH SEAFOODS, INC.

Fishermen's Terminal, Bldg. C-3, Rm. 131, Seattle, WA 98119
206-285-2412 • Telex: 32-1295 Ocean Frsh Sea

Personnel: Ted L. Otness, Pres.; Bill Bryant, Sales Mgr.

Plant Locations and Capabilities: Kodiak, AK: frozen king, snow, Dungeness, salmon.

Brand Packed Under: Alaska Fresh

ALASKA PACKERS ASSOCIATION, INC.

1200 112th Ave. NE, P.O. Box 3326, Bellevue, WA 98009
206-455-1745 • Telex: 32-8914

Parent Company: Del Monte Corp.

Personnel: W.H. Nichols, V. Pres.; E.D. Bickley, V. Pres. Marketing.

Plant Locations and Capabilities: South Naknek, AK: canned. Chignik, AK: canned, frozen. Kodiak, AK: frozen. Hammond, OR: frozen, fresh.

Brand Packed Under: Del Monte, Peacock

ALASKA-SHELL INC.

4241 21st Ave. W., Seattle, WA 98199
206-285-3350 • Telex: 32-8785

Parent Company: Peter J. Marinkovich, Pres.; Molly M. Boll, V. Pres. Marketing.

Personnel: Akutan, AK: frozen king crab, snow crab, salmon; cured salt cod.

Plant Locations and Capabilities: Alaska-Shell

ALASKAN GOURMET SEA FOODS

1130 W. International Airport, P.O. Box 6733, Anchorage, AK 99502
907-274-9508 • Telex: 25-327

Personnel: Paul L. Schilling, Pres.; Dave Nelson, Sales Mgr.

Plant Locations and Capabilities: Anchorage, AK: fresh/frozen halibut & salmon.

ANNETTE ISLAND PACKING COMPANY

4802 20th Ave. NW, P.O. Box 70547, Seattle, WA 98107
206-782-8882

Personnel: Karl S. Cook, Sr., Mgr.

Plant Locations and Capabilities: Metlakatla, AK: fresh/frozen/canned salmon.

Brand Packed Under: Open label

AQUASEA FARMS, INC.

Rt. 2, Box 3190, Lopez, WA 98261
206-468-2668 • Telex: ECA/ATC Kirkland, WA

Parent Company: E.C.A., Kirkland, WA

Personnel: Robert Ellis, Pres.; Julie Anderson, Sales Mgr.

Plant Locations and Capabilities: Lopez Island, WA: fresh/frozen farm-raised plate-size coho salmon.

Brand Packed Under: Aquasea Farms Coho Salmon

ARROWAC FISHERIES

P.O. Box 1347, Ferndale, WA 98243
206-384-4006 • Telex: 32-84-32

Parent Company: Arrowfish, Inc.

Personnel: Frank M. Mercker, Pres.

Plant Locations and Capabilities: Ferndale, WA: fresh/frozen Pacific dogfish, salmon blackcod, crab, pollock, bottomfish; custom processing.

Brand Packed Under: Arrowfish, Merco

ASTRA INDUSTRIES INC.

1477 W. Pender, Vancouver, B.C., Canada
604-669-3741 • Telex: 04508829-Kincal

Parent Company: Calkins & Burke Ltd.

Personnel: David B. Calkins, Pres.; Carl MacRae & Denis Martell, Sales Mgrs.

Plant Locations and Capabilities: Vancouver, B.C.: fresh/frozen/canned salmon; fresh/frozen halibut, groundfish, cod, shrimp, herring, herring roe.

Brand Packed Under: Astra, Neptune's Choice

BLAKES CANNING

Box 94, Cordova, AK 99574
907-424-3682

Personnel: Mrs. Margaret C. Blake, Pres.

Plant Locations and Capabilities: Cordova, AK: canned smoked red and king salmon.

Brand Packed Under: Blakes Fancy Smoked Salmon

BRITISH COLUMBIA PACKERS LTD.

P.O. Box 5000, Vancouver, B.C., Canada V6H 4A8
604-277-2212 • Telex: 04-355588

Parent Company: George Westons

Personnel: J.B. Buchanan, Pres.; P.A. Todd, V. Pres. Marketing.

Plant Locations and Capabilities: Vancouver, Pt. Edward, Naknek, AK: fresh, frozen & canned salmon; frozen herring; fresh/frozen groundfish.

Brand Packed Under: Cloverleaf & Paramount (canned), Rupert (frozen)

BUMBLE BEE SEAFOODS

Castle & Cooke Bldg., Fishermen's Terminal, P.O. Box 17705, Seattle, WA 98107

206-284-0900 • Telex: 32-9439

Parent Company: Castle & Cooke, Inc.

Personnel: Ronald Jensen, Pres.; Lee Patton, Sales Mgr.

Plant Locations and Capabilities: South Naknek, AK: canned/frozen salmon. Bellingham, WA: canned/frozen salmon. San Diego, CA, Hawaii, Puerto Rico: canned tuna.

Brand Packed Under: Bumble Bee, Swiftwater, Delmonico, Harpoon, Cloverleaf, Tuxedo, Commerce, Beacon, Portrait

CALIFORNIA SHELLFISH CO., INC.

420 Jefferson St., P.O. Box 2028, San Francisco, CA 94109
415-775-9241 • Telex: 336321

Personnel: Robert J. Bugaffo, Pres.; Hugh Lavan, Sales Mgr.

Plant Locations and Capabilities: Point St. George Fisheries, Santa Rosa, CA: fresh/frozen; Les Amundsen, Mgr. Cal-East Foods, Oakland, CA: fresh/frozen; Douglas Cano, Mgr. West Coast Crab Co., Oakland, CA: fresh/frozen; George Agostini, Mgr. Cal-East Foods, Las Vegas, NV: fresh/frozen; Robert Frusco, Mgr.

Brand Packed Under: Point St. George, Hall Mark, Pacific Pride, Ocean Supreme

CALIFORNIA SUNSHINE INC.

2171 Jackson, San Francisco, CA 94115
415-567-8901 • Telex: IIT 470085

Personnel: Mats Engstrom, Pres.; Daphne Engstrom, Sales Mgr.

Plant Locations and Capabilities: Sacramento, CA: fresh/frozen crayfish, smoked salmon, trout, sturgeon, herring; caviar.

Brand Packed Under: Tsar Nicovki, California Sunshine

THE CANADIAN FISHING COMPANY LIMITED

Ft. Gore Ave., Vancouver, B.C., V6A 2Y7 Canada
604-681-0211 • Telex: 04-53372

Personnel: D.F. Miller, Pres.; G.W. Jasper, Sales Mgr.

Plant Locations and Capabilities: Vancouver, B.C.: fresh/frozen/canned salmon; salmon roe, herring roe, food herring.

Brand Packed Under: Goldseal

THE CASSIAR PACKING COMPANY LIMITED

13140 Rice Mill Rd., Richmond, B.C., V6W 1A1 Canada
604-274-1221 • Telex: 04-357561

Personnel: A.E. MacMillan, Pres.; J. R. Barnsley, Managing Dir.

Plant Locations and Capabilities: Cassiar Cannery, Skeena River, B.C. Fraser River Plant, Richmond, B.C.

Brand Packed Under: Red Clover

CASTLE & COOKE, PAN ALASKA FISHERIES, BUMBLE BEE SEAFOODS

1800 W. Emerson, P.O. Box 17705, Seattle, WA 98107

206-284-0900 • Telex: 32-9439 PANAKFISH SEA

Personnel: William Woods, Production Mgr.; Les Hodges, Sales Mgr.**Plant Locations and Capabilities:** Unglaska, Kodiak, Bristol Bay, M/V Royal Sea, M/V Royal Venture: king crab, snow crab, frozen/canned salmon, halibut, blackcod.**Brand Packed Under:** Royal Alaskan, Bumble Bee**CENTENNIAL SEAFOODS INC.**

556 Towne Ave., Los Angeles, CA 90013

213-623-2214 • Telex: 69-8237

Personnel: John Vellis, Pres.; Ted Beauchamp, Sales Mgr.**Plant Locations and Capabilities:** Los Angeles, CA: process and repackage shrimp, crab, salmon, halibut, swordfish.**Brand Packed Under:** Centennial Gourmet**CENTRAL NATIVE FISHERMENS CO-OP**

303 Vernon Dr., Vancouver, B.C., V6A 3N3 Canada

604-255-6276 • Telex: 0453488

Personnel: D.G. Larden, Pres.; W.R. Murdoch, Gen. Mgr.; J.C. Elsey, Sales Mgr.**Plant Locations and Capabilities:** Bella Bella, B.C.: canned/frozen salmon, herring, herring roe, salmon roe. Ucluelet, B.C.: frozen salmon, herring, herring roe, salmon roe.**Brand Packed Under:** CNFC Raven**CERTI-FRESH FOODS**

13055 E. Molette St., Santa Fe Springs, CA 90670

213-921-8311 • TWX: 9105831433

Parent Company: British Columbia Packers**Personnel:** Eugene J. Deiss, Pres.; Jack Casoffi, Sales Mgr.**Plant Locations and Capabilities:** Santa Fe Springs, CA: frozen, all species.**Brand Packed Under:** Certi-Fresh**CHINOOK PACKING CO.**

P.O. Box 206, Chinook, WA 98614

206-777-8272

Parent Company: Ocean Beauty Seafoods**Personnel:** Victor W. Horgan, Sr., Pres.**Plant Locations and Capabilities:** Chinook, WA: fresh/frozen shrimp, Dungeness crab, troll and gillnet salmon, sturgeon, bottomfish fillets; frozen king and snow crab.**Brand Packed Under:** Man-of-War, Gypsy**COLUMBIA WARDS FISHERIES**

88 E. Hamlin St. (98102), P.O. Box C 5030 University Sta. (98105),

Seattle, WA

206-323-3200 • Telex: 32-8759

Plant Locations and Capabilities: Craig, AK: fishing fleet maintenance and supply base; salmon, halibut; Carl A. Aspelund, Superintendent; Yoko Slater, Accountant. Egegik, AK: fishing fleet maintenance and supply base; salmon, halibut; Steven Skogmo, Plant Mgr.; Ekuk, AK: canned/frozen salmon, halibut; John S.

Bozanich, Plant Mgr.; Sean Rice, Accountant. Kenai, AK: canned/frozen salmon, halibut; Raymond E. Landry, Superintendent; Donald D. Brindle, Frozen Production Superintendent; James O. Peterson, Accountant. Alitak, AK: canned/frozen salmon, halibut; Winn F.

Brindle, Superintendent; Gloria Bryce, Accountant. Port Bailey, AK: canned/frozen salmon, halibut; John Jorgensen, Superintendent; Hender Toms, Accountant. Kodiak, AK: canned/frozen: salmon,

halibut; Emil Norton, Superintendent; Shirley Dasher, Accountant. Moser Bay, AK: fishing fleet maintenance and supply base; salmon, halibut; Clare Skogmo, Superintendent; Kettle West,

Accountant. Chignik Lagoon, AK: fishing fleet maintenance and supply base; salmon, halibut; B.R. Bender, Superintendent; Cindy Turner, Accountant.

Brand Packed Under: Royal Club, Pirate, Mohawk, Deep Sea, Zest and private label brands**CORINTHIAN FISH CO. INC.**

1050 Dakota St., Anacortes, WA 98221

206-293-3154 • Telex: 152 614

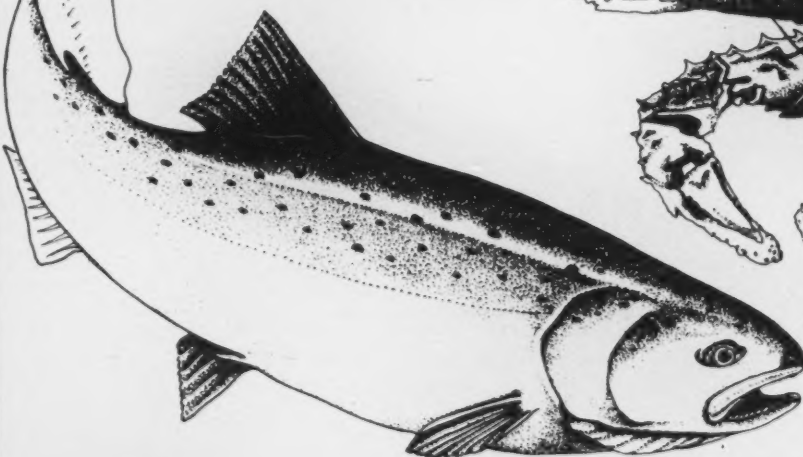
Personnel: Johnnie Dontos, Pres.; Ken Ketrick, Sales Mgr.**Plant Locations and Capabilities:** Anacortes, WA: Westport, WA, Astoria, OR.**Brand Packed Under:** Corinthian**DUTCH HARBOR SEAFOODS, LTD.**

15110 NE 90th, P.O. Box 94, Redmond, WA 98052

206-881-8181

Personnel: Richard C. White, Pres.; Intersea Fisheries, Sales.**Plant Locations and Capabilities:** M/V Galaxy, M/V Viceroy: frozen king crab, snow crab, salmon, herring. Barge Dippor: frozen salmon, herring.**Brand Packed Under:** Unisea, Dutch Harbor, Aleutian

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EAST POINT SEAFOOD CO.

Bldg. C-3, Fishermen's Terminal, Seattle, WA 98119
206-284-7571

Parent Company: Queen Fisheries, Inc.

Personnel: E.H. Bendiksen, Pres.

Plant Locations and Capabilities: Dutch Harbor, AK: M/V East Point; frozen crab. Kodiak, AK: canned shrimp. Dillingham, AK: canned salmon.

Brand Packed Under: East Point Seafood

EGEGIK SEAFOODS

1100 W. Ewing St., P.O. Box C-70739, Seattle, WA 98107
206-285-6800 • Telex: 32-1071 & 32-8721

Parent Company: Kodiak King Crab, Inc.

Personnel: William C. Hingston, Pres.; R.E. Silver, Sales Mgr.; Sewall Clake, Plant Mgr.

Plant Locations and Capabilities: Egegik, AK: canned salmon.

EUREKA FISHERIES INC.

Ft. of C St., P.O. Box 217, Fields Landing, CA 95537
707-443-1673 • TWX: 510-742-2202

Personnel: Budd Thomas, Gen. Mgr.; Mike Thomas, Sales Mgr.

Brand Packed Under: Eureka

EXCURSION INLET PACKING CO.

88 E. Hamlin St. (98102), P.O. Box C5030, University Sta. (98105), Seattle, WA

206-323-3200 • Telex: 32-8759

Personnel: John R. Gilbert, Pres.

Plant Locations and Capabilities: Excursion Inlet, AK: canned/frozen salmon, halibut; Robert L. Syre, Superintendent; Gary F. Moore, Asst. Superintendent.

Brand Packed Under: Royal Club, Pirate, Mohawk, Deep Sea, Zest and Private Label Brands.

FISHERMEN'S CO-OPERATIVE FEDERATION

2851 Commissioner St., Vancouver, B.C., V5K 3A1 Canada
604-255-6255 • Telex: 04-507721

Parent Company: Prince Rupert Fishermen's Co-operative Assn.

Personnel: Robert A. Shumka, Pres.; Michael L. Thompson, Sales Mgr.

Plant Locations and Capabilities: Prince Rupert & Vancouver, B.C.: fresh/frozen bottomfish, frozen/canned salmon, frozen/cured herring, fish roes, Dungeness crab, halibut.

Brand Packed Under: Hy-Wave, Challenger

GALLETI BROTHERS FOODS

1729 E. 21st St., Los Angeles, CA 90058
213-744-1830 • Telex: 67-4907

Personnel: Abel C. Galletti, Pres.; Joseph Galletti, Sales Mgr.

Plant Locations and Capabilities: Los Angeles, CA

Brand Packed Under: Galletti Brothers Foods

GRADER FISH CO.

North Harbor Dr., P.O. Box 1187, Fort Bragg, CA 95437
707-964-2398

Personnel: William F. Grader, Pres.

Plant Locations and Capabilities: Fort Bragg, CA: fresh/frozen bottomfish, crab; fresh/frozen/cured salmon.

Brand Packed Under: Grader's Best

HALIBUT PRODUCERS CO-OPERATIVE

P.O. Box 1235, Bellingham, WA 98227
206-733-0120 • Telex: 152338

Personnel: Denny Kimmel, Pres.; Henry Montesano, Sales Mgr.; Robert A. Worley, Production Mgr.; John Lecture, Gen. Mgr.; Don Reinhardt, Bellingham Mgr.; Gail Stromme, Sitka Mgr.

Plant Locations and Capabilities: Sitka, AK: fresh/frozen salmon, halibut, blackcod, shrimp, rockfish, herring.

Brand Packed Under: HPC

HEGG & HEGG SMOKED SALMON INC.

801 Marine Dr., Port Angeles, WA 98362
206-457-3344

Personnel: Fred Hegg, Pres.; Bob W. Smith, Sales Mgr.

Plant Locations and Capabilities: Port Angeles, WA: canning and smoking.

Brand Packed Under: Hegg & Hegg

ICICLE SEAFOODS, INC.

4241 21st Ave. W., Seattle, WA 98199
206-282-0988 • Telex: 32-0938 PFICICLE-SEA

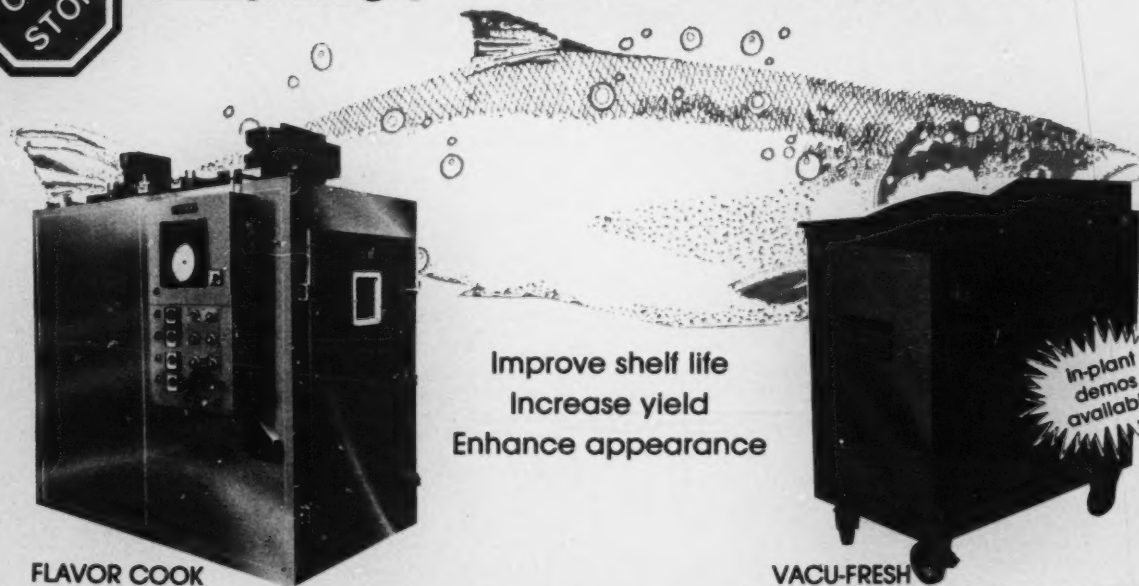
Personnel: Robert F. Brophy, Pres.; E.A. Ruthford, Sales Mgr.; Ralph Hoard, Prod. Mgr.; Mark Denison, Purchasing Agent.

Plant Locations and Capabilities: Petersburg, AK: all species, frozen and canned. Seward, AK: all species, frozen and canned. Homer, AK: frozen salmon, halibut, crab, shrimp. Barge Arctic Star: frozen salmon & crab. Barge Bering Star: frozen salmon & crab.

Brand Packed Under: Icicle



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MEAT PACKERS & BUTCHERS SUPPLY COMPANY

INDEPENDENT FISHERMEN'S PACKING CO., INC.
100 "O" Ave., P.O. Box 298, Anacortes, WA 98221
206-293-9522 • Telex: 15-2980

Personnel: Gregory Kirsch, Pres.; Steve Pringle, V. Pres.
Plant Locations and Capabilities: Anacortes, WA, F/V American Scooter; fresh/frozen salmon, halibut, herring, bottomfish; canned Puget Sound pink salmon; salmon and herring caviar.
Brand Packed Under: Shearwater Seafood

INTERNATIONAL MULTIFOODS CORP.
1220 Multifooods Bldg., Minneapolis, MN 55402
612-340-6556

Personnel: Paul Quinn, Div. V. Pres.; Paul Wehrlin, V. Pres. Trading Oper.; Mark Grabau, Sales; Ronald Schmidt, Plant Mgr.
Plant Locations and Capabilities: Bandon, OR: bass, catfish, cod, crab and crabmeat, crayfish, cuttlefish, flounder, haddock, hake, halibut, herring, ling, lobster and lobstermeat, lobster tails, mackerel, mahi mahi, mullet, perch, pike, porgies, prawns, redfish, rockfish, roe, sablefish, salmon, sardines, sea urchin, shark, shellfish, shrimp, skate, smelts, snapper, sole, squid.
Brand Packed Under: Oregon Choice, Bandon by the Sea

JESSIE'S ILWACO FISH CO. INC.
Port Docks, P.O. Box 800, Ilwaco, WA 98624
206-642-3773 • Telex: 152-865

Personnel: A. Pierre Marchand, Jr., Pres.; Tom Rister, Sales Mgr.
Plant Locations and Capabilities: Ilwaco, WA: shrimp, crab, salmon, scallops, bottomfish, blackcod. P.M. Seafoods Garibaldi, OR: shrimp, salmon, bottomfish.
Brand Packed Under: Seaside

JONAH, INC.
13425 NE 20th, P.O. Box C-3225, Bellevue, WA 98009
206-643-1916 • TWX: 910-443-3024

Personnel: William K. Deshler, Pres.; William P. Clancy & William B. Grubb, Sales.
Plant Locations and Capabilities: Floating processor/Port Moller Bristol Bay: frozen salmon. Cordova, AK: fresh salmon.
Brand Packed Under: Jonah

JUNEAU COLD STORAGE CO.
356 S. Franklin St., Juneau, AK 99801
907-586-1452 • Telex: 099-45332

Parent Company: Kodiak King Crab, Inc.
Personnel: William C. Hingston, Pres.; Norman E. Weltkamp, Sales Mgr.; Hank Benton, Plant Mgr.
Plant Locations and Capabilities: Juneau, AK: fresh/frozen salmon, halibut, blackcod, crab, scallops, and fish roe.

KEENER PACKING COMPANY, INC.
S.R. 2, Box 738, Soldotna, AK 99669
907-283-9264
Personnel: Leonard (Bud) Keener, Pres.
Plant Locations and Capabilities: Soldotna, AK: frozen/canned salmon.

KIRKLAND CUSTOM CANNERY, INC.
640 8th Ave., Kirkland, WA 98033
206-828-4521 or 206-822-1891
Personnel: Thad C. Pound, Pres.
Plant Locations and Capabilities: smoked canned/frozen/fresh salmon; smoked canned tuna, rainbow trout, sturgeon, salmon & rainbow trout pate, oysters; smoked blackcod; abalone.
Brand Packed Under: Thunderbird, Tall Tale, and private labels.

KODIAK KING CRAB, INC.
P.O. Box 1457, Kodiak, AK 99615
907-486-5791 • Telex: 090-26514
Parent Company: Washington Fish & Oyster/Marubeni Corp.
Personnel: William C. Hingston, Pres.; Norman E. Weltkamp, Sales Mgr. (fresh/frozen); R.E. Silver, Sales Mgr. (canned); Roy Jones, Plant Mgr.
Plant Locations and Capabilities: Kodiak, AK: canned/fresh/frozen salmon, halibut, shrimp, crab, scallops, herring, fish roe.

TOM LAZIO FISH CO., INC.
1 Commercial St., Eureka, CA 95501
707-442-2981 • Telex: 510-742-2125
Personnel: Lawrence G. Lazio, Pres.; Vince Thomas, Sales Mgr.
Plant Locations and Capabilities: Eureka, CA: fresh/frozen & canned. Newport, Charleston Harbor, OR; Trinidad, Crescent City, Eureka, CA: receiving stations.
Brand Packed Under: Lazio, Shelter Cove, Humboldt Bay Fisheries, generic label.

LIL' BIT O' HEAVEN
16536 NE 40th, Redmond, WA 98052
206-883-1654
Personnel: Peggy McIntyre, Pres. (salmon); Chef McIntyre, Pres. (trout).
Plant Locations and Capabilities: Redmond, WA: fresh rainbow trout, canned salmon.
Brand Packed Under: Lil' Bit O' Heaven

LONG BEACH SEAFOODS COMPANY
825 W. 16th St., Long Beach, CA 90813
213-435-5357
Personnel: Kenneth B. Stilwell, Pres.; Barry K. Stilwell, Sales Mgr.; Kent B. Stilwell, V. Pres. Purchasing.
Plant Locations and Capabilities: Long Beach, CA: fresh/frozen halibut, salmon, seabass, swordfish, mahi mahi.
Brand Packed Under: Fan Sea

MARINE RESOURCES CO.
192 Nickerson, Suite 307, Seattle, WA 98109
206-285-6424 • Telex: 32-8041 MRC SEA
Parent Company: Bellingham Cold Storage
Personnel: Walter T. Pereyra, V. Pres. & Gen. Mgr.; Valery G. Latishev, V. Pres. & Gen. Mgr.; David W. Galloway, Marketing Mgr.

J.S. McMILLAN FISHERIES LTD.
2199 Commissioner St., Vancouver, B.C., Canada V5L 1A4
604-255-5195 • Telex: 04-51512
Personnel: Barry McMillan, Pres.; Mike Epstein, Sales Mgr.
Plant Locations and Capabilities: Vancouver, Prince Rupert: fresh, frozen, canned, smoked salmon; fresh/frozen groundfish, halibut, herring & blackcod.
Brand Packed Under: McMillan

MEREDITH FISH CO.
2601 5th St., P.O. Box 954, Sacramento, CA 95804
916-446-0251
Personnel: Mike Turnacilff, Pres.; Bob Hiltachk, Sales Mgr.
Plant Locations and Capabilities: Bodega Bay, Fort Bragg, Eureka, CA: fresh receiving, handling, unloading, shipping. Brookings, OR: fresh handling, cooking, picking, packing, freezing, canning, processing.
Brand Packed Under: Meredith

MONARCH SEAFOOD CO., INC.
621 S. Gladys, Los Angeles, CA 90021
213-627-9131
Personnel: Harry Hannemann, Pres.; Charles Hinchmann, Sales Mgr.
Plant Locations and Capabilities: Los Angeles, CA: wholesale seafood distributor, seafood processing, import & export.
Brand Packed Under: Monarch

MORPAC, INC.
180 Nickerson, Suite 207, Seattle, WA 98109
206-284-2940
Personnel: Robert F. Morgan, Pres.
Plant Locations and Capabilities: Cordova, AK: frozen/canned salmon; fresh/frozen Dungeness crab; frozen snow crab, herring. Dillingham, AK: canned/frozen salmon.
Brand Packed Under: Morpac

MUTUAL FISH CO. INC.
2335 Rainier S., Seattle, WA 98144
206-322-4368
Personnel: D. Yoshimura, Pres.; H. Yoshimura, Sales Mgr.

NELBRO PACKING COMPANY
P.O. Box 9, Northgate Sta., Seattle, WA 98125
206-527-4155
Parent Company: B.C. Packers Limited
Personnel: Trevor K. Beeston, Pres.; Tibor J. Young, Secretary/Treasurer.
Plant Locations and Capabilities: Naknek, AK: frozen/canned salmon, frozen herring.

NEPTUNE SEA FOOD CO., INC.
619 Kohler St., P.O. Box 21391, Los Angeles, CA 90021
213-626-5895
Personnel: Sid Lesser, Pres.; James Hargrove, Sales Mgr.
Plant Locations and Capabilities: Los Angeles, CA: shrimp, scallops, oysters, cod, sole, pollock, ocean perch, calamare, whiting.
Brand Packed Under: S.E. Rykoff & Neptune

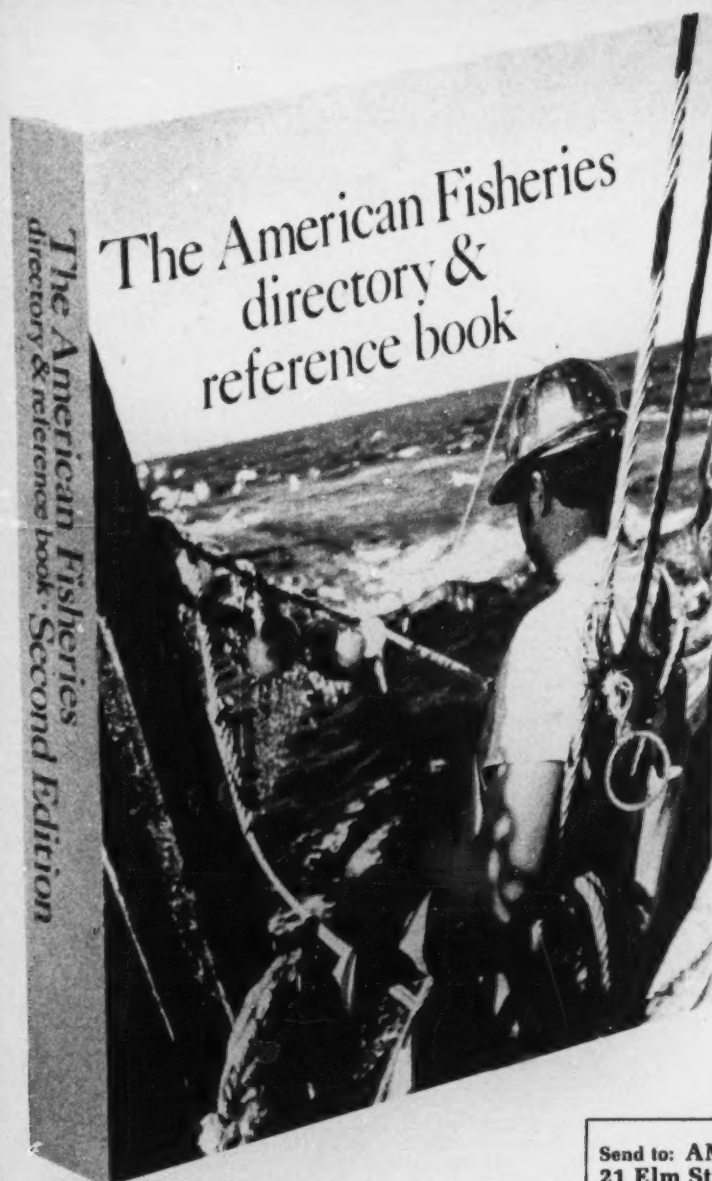
NORTH PACIFIC PROCESSORS, INC.
2155 N. Northlake Way, P.O. Box 31179, Seattle, WA 98103
206-632-9900 • Telex: 32-9248
Personnel: H.A. Daubenspeck, Pres.; Robert S. Ennis, Sales Mgr.
Plant Locations and Capabilities: Cordova, AK: frozen/canned.
Brand Packed Under: Royal Red, Royal Pink, Sno-Tip, 49th Star

NORTHERN PRODUCTS CORP.
705 Terminal Sales Bldg., Seattle, WA 98101
206-622-6677 • Telex: 32-1073
Personnel: Robert E. Dignon, Pres.; William A. Dignon, V. Pres.
Plant Locations and Capabilities: Thompson Fish Co., Hoonah, AK; Seapro Cold Storage, Seattle, WA; Rainier Ice & C/S, Seattle, WA; Bellingham C/S, Bellingham, WA — frozen salmon, halibut, blackcod.
Brand Packed Under: Ideal

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NORTHERN SEAFOODS INC.

1577 C St., Suite 212, Anchorage, AK 99501
907-279-5222 • Telex: (314) 25-470

Parent Company: Hokoku Marine Prod Co. Ltd.

Personnel: Y. Iijima, Pres.; Jack McMahon, Sales Mgr.

Plant Locations and Capabilities: Anchorage, AK: salmon roe and salmon. Bethel, AK: salmon roe and salmon.

OCEAN BEAUTY ALASKA, INC. / KETCHIKAN COLD STORAGE

P.O. Box 6658, Ketchikan, AK 99901

907-225-3166 • Telex: 090-55245

Parent Company: Ocean Beauty Alaska, Inc.

Personnel: John G. Peterson, Pres.; Norman E. Weitkamp, Sales Mgr.; Mike Cusak, Plant Mgr.

Plant Locations and Capabilities: Ketchikan, AK: fresh/frozen salmon, halibut, herring, blackcod, and fish roe.

OCEAN BEAUTY ALASKA, INC. — UGANIK DIVISION

1100 W. Ewing St., P.O. Box C-70739, Seattle, WA 98107

206-285-6800 • Telex: 32-1072 or 32-8721

Parent Company: Ocean Beauty Alaska, Inc.

Personnel: John G. Peterson, Pres.; R.E. Silver, Sales Mgr.; Hew Kirkpatrick, Plant Mgr.

Plant Locations and Capabilities: Uganik Bay, AK: canned salmon.

OCEAN FISHERIES, INC.

180 Nickerson St., Suite 309, Seattle, WA 98109

206-282-6778

Parent Company: Jonah, Inc.

Personnel: Scott C. Jacobsen, Pres.

Plant Locations and Capabilities: Floating processor, Bristol Bay, AK: frozen salmon.

Brand Packed Under: Jonah

OLYMPIA OYSTER COMPANY

S.E. 1042 Bloomfield Rd., Shelton, WA 98584

206-426-3354

Personnel: Thomas R. Ingham, Pres.; Richard R. Lewis, Sales Mgr.

Plant Locations and Capabilities: Shelton, WA: fresh/frozen Pacific oysters, fresh clams, fresh Olympia oysters, canned concentrated soup base, smoked oyster fillets.

Brand Packed Under: Puget Sound Oyster Soup Base, Puget Sound Smoked Oyster Fillet.

OREGON AQUA FOODS

88700 Marcola Rd., Springfield, OR 97477

503-746-4484

Parent Company: Weyerhaeuser

Personnel: William A. Feldt, Pres.; Howard M. Johnson, Sales Mgr.

Plant Locations and Capabilities: Newport, OR: fresh/frozen salmon. Coos Bay, OR: fresh/frozen salmon.

Brand Packed Under: Oreaqua

PACIFIC PEARL SEAFOODS, INC.

1203 114th Ave. SE, P.O. Box C-10220, Bellevue, WA 98004

206-453-4600 • Telex: 32-0068

Parent Company: Amfac Foods, Inc.

Personnel: Frederick J. Bolthouse, Pres.

Plant Locations and Capabilities: Dutch Harbor, Captain's Bay, Seldovia, AK: frozen seafood. Kodiak, AK: canned/frozen seafood.

Brand Packed Under: Pacific Pearl & Wakefield

PACIFIC POINT SEAFOODS LTD.

7780 River Rd., Richmond, B.C., Canada V6X 1X7

604-270-1653 • Telex: 04-355804

Parent Company: Yamazaki Enterprise Ltd.

Personnel: Dick H. Yamazaki, Sales Mgr.

Plant Locations and Capabilities: Richmond, B.C.: fresh, frozen, smoked, dried fish, herring, salmon & pollock roe, abalone, clams and other bivalves.

PACIFIC SALMON COMPANY, INC.

P.O. Box 21587, Seattle, WA 98111

206-622-9368 • Telex: 32-0248

Personnel: John A. McCallum, Pres.; Seb Jerusalem, Sales Mgr.

Plant Locations and Capabilities: Seattle, LaPush, Bingen, WA: salmon, halibut, bottomfish, sable, shellfish.

Brand Packed Under: Pacific

PAN-ALASKA FISHERIES, INC.

Castle & Cooke Bldg., Fishermen's Terminal, P.O. Box 17705,

Seattle, WA 98107

206-284-0900 • Telex: 32-9439

Parent Company: Castle & Cooke, Inc.

Personnel: Ronald Jensen, Pres.; Les Hodges, Sales Mgr.

Plant Locations and Capabilities: Kodiak, Unalaska, AK: processing plants. Monroe, WA: cold storage. M/V Royal Venture, M/V Royal Sea: floating processors, king crab, snow crab, salmon, shrimp, bottomfish.

Brand Packed Under: Royal Alaskan, Bumble Bee.

PEDERSON POINT

1100 W. Ewing St., P.O. Box C-70739, Seattle, WA 98107

206-285-6800 • Telex: 32-1071 or 32-8721

Parent Company: Kodiak King Crab, Inc.

Personnel: William C. Hingston, Pres.; Norman E. Weitkamp, Sales Mgr.; Kern Roberts, Plant Mgr.

Plant Locations and Capabilities: Pederson Point, AK: frozen salmon & herring.

PELICAN COLD STORAGE COMPANY

653 N.E. Northlake Way, P.O. Box 5538, Seattle, WA 98105

206-632-9000 • Telex: 32-8911

Personnel: J.G. Ferguson, Pres.; Thomas P. Gordon, Sales Mgr.

Plant Locations and Capabilities: Pelican, AK: frozen salmon, crab, halibut, blackcod. Port Alexander, AK: frozen salmon, halibut, blackcod. Sandpoint, AK: frozen salmon, crab, halibut, blackcod.

ATCO Seafoods, Inc., catcher/processor/tender/M/V Coastal Glacier.

Brand Packed Under: Sitka, Northern Queen

PETER PAN SEAFOODS, INC.

1220 Dexter-Horton Bldg., Seattle, WA 98104

206-624-4344 • Telex: 328422

Personnel: Jay S. Gage, Pres.; Thomas L. Steinbach, Sales Mgr.

Plant Locations and Capabilities: Bellingham, WA: fresh/frozen/ canned salmon. Dillingham, AK: fresh/canned salmon. False Pass, AK: canned salmon. King Cove, AK: frozen/canned salmon, crab. Ketchikan, Kodiak, Naknek, Sand Point, Warren, AK: fish buying stations.

Brand Packed Under: Peter Pan, Deming's, Gillnetters Best, Double Q, Humpty Dumpty, Show Boat, Seakist, Unica.

PETERSBURG PROCESSORS, INC.

207 Fishermen's Terminal, Seattle, WA 98119

206-284-4833 • Telex: 32-8852

Personnel: Raymond C. Wood, Pres.; Ann Viles, Sales Mgr.

Plant Locations and Capabilities: Petersburg, AK: canned/frozen salmon.

Brand Packed Under: Polar Star, Pacific Pride.

PRINCE RUPERT FISHERMEN'S CO-OPERATIVE ASSOC.

P.O. Box 520, Prince Rupert, B.C., Canada V8J 3R7

604-624-2146 • Telex: 047-89117

Personnel: Michael Florian, Pres.; R.A. Shumka, Chief Executive Officer; M.L. Thompson, Sales Mgr.

Plant Locations and Capabilities: Prince Rupert, B.C.: canned/frozen salmon, crab; fresh/frozen halibut, groundfish; herring roe, fish meal. Vancouver, B.C.: salmon, halibut, herring.

Brand Packed Under: HyWave, Challenger, White Crest.

RED SALMON COMPANY

88 E. Hamlin St. (98102), P.O. Box C-5030, University Sta. (98105), Seattle, WA

206-323-3200 • Telex: 32-8759

Parent Company: Wards Cove Packing Co., Inc.

Personnel: H.A. Brindle, Gen. Mgr.; Patrick J. Douglas, Sales Mgr.

Plant Locations and Capabilities: Naknek, AK: canned/frozen salmon and halibut; William Ady, Accountant.

Brand Packed Under: Royal Club, Pirate, Mohawk, Deep Sea, Zest, and private label brands.

SARGENT OYSTER CO., INC.

P.O. Box 189, Allyn, WA 98524

206-426-4067

Personnel: Terry McKean, Pres.

Plant Locations and Capabilities: Allyn, WA.

Brand Packed Under: Sargent Oyster Co. Inc.

SEA-ALASKA PRODUCTS, INC.

150 Nickerson St., Suite 300, Seattle, WA 98109

206-284-2051 • Telex: 32-0240

Parent Company: Con Agra

Personnel: Robert Resoff, Pres.; William O'Connor, Sales Mgr.

Plant Locations and Capabilities: Dutch Harbor, AK: M/V Sea Producer, M/V Sea Alaska, M/V R.E. Resoff: frozen king crab, snow crab, herring, salmon, cod, Dungeness crab.

Brand Packed Under: Stormy Seas, Alaska Seas

SEA-NIK FOODS

P.O. Box 73, Ninilchik, AK 99639

907-567-3980

Personnel: James A. Garrouette, Pres.

Plant Locations and Capabilities: Ninilchik, AK: fresh/frozen/ smoked/canned salmon.

Brand Packed Under: Sea-Nik Foods

SEA PRO

210 SW Michigan St., P.O. Box 24978, Seattle, WA 98124

206-767-7350 • Telex: 32-0255

Parent Company: City Ice

Personnel: William F. Manning, Pres.; Robert Wallace, Mgr.

Plant Locations and Capabilities: Seattle, Neah Bay, WA; Anchorage, AK.

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140 Olivier St., P.O. Box 1388, Monterey, CA 93940

408-375-5121 • Telex: 351457 Consolact

Personnel: K. Nobusada, Kenneth H. Sato, Warren K. Nobusada, Partners.**Plant Locations and Capabilities:** Moss Landing, CA: frozen squid, roe herring; fresh/frozen albacore; salted herring roe. Crescent City, CA: fresh/frozen salmon, albacore, Dungeness crab, scallops; frozen shrimp, crab; fresh rockcod, lingcod, blackcod, soles.**Brand Packed Under:** Sea Diamond, Sea Pearl, Sea Jade, Crescent Fisheries.**SEA SNACK FOODS, INC.**

914 E. 11th St., Los Angeles, CA 90021

213-622-2204 • TWX: 910-321-5674

Personnel: Fred W. Ockrim, Pres.**Plant Locations and Capabilities:** Los Angeles, CA: frozen/cooked shrimp, cooked shrimp in sauce, cooked crab in sauce.**Brand Packed Under:** Sea Snack, Restaurant Row, O.K. Brand**SEAFARMS PACIFIC**

121 E. Railroad, P.O. Box 1256, Port Angeles, WA 98362

206-452-4705

Personnel: Gary Engman, Pres.**Plant Locations and Capabilities:** Port Angeles, Brinnon, WA: fresh/frozen salmon, roe, blackcod, groundfish, oysters, clams. Dungeness Bay, Blaine, WA: oyster farm.**Brand Packed Under:** Seafarms, Dungeness, Quilcene, Sea Harvest.**SEAFOOD PACKERS, INC.**

5726 Airport Way S., P.O. Box 24746, Seattle, WA 98124

206-767-6320 • Telex: 321263

Parent Company: Washington Fish & Oyster Co.**Personnel:** Douglas G. Wallick, Pres.**Plant Locations and Capabilities:** Seattle, WA: custom processing of crab & fish.**SEARUN SEAFOODS LTD.**

4507 Shilshole Ave. NW, Seattle, WA 98107

206-789-0883 • Telex: 32-8006

Personnel: George Palmerston, Pres.; Cecil Beauchamp, Sales Mgr.;

Phil Friedrich, Plant Gen. Mgr.

Plant Locations and Capabilities: Seattle, WA: fresh/frozen salmon, bottomfish; frozen crab; ice sales; custom processing.**Brand Packed Under:** Sea Princess, Sea Run**SEATTLE SEAFOODS**

Pier 24, P.O. Box 24746, Seattle, WA 98124

206-682-2150 • Telex: 321263

Parent Company: Washington Fish & Oyster Co.**Personnel:** Douglas G. Wallick, Pres.**Plant Locations and Capabilities:** Seattle, WA: halibut, salmon, king crab, snow crab, shrimp, scallops; custom processing.**SEAWEST INDUSTRIES, INC.**

100 2nd Ave., Edmonds, WA 98020

206-771-7171 • Telex: 152-623

Personnel: Darryl K. Pedersen, Pres.; Robert Simon, Gregory Skorod, Salesmen.**Plant Locations and Capabilities:** Bellingham, WA: fresh/frozen Dungeness crab, cod filets, salmon, oysters, halibut; frozen king & tanner crab, herring. Akutan, AK, M/V Akutan, M/V Western Sea: frozen king, tanner & Dungeness crab; salmon.**Brand Packed Under:** Seawest**SITKA SOUND SEAFOODS, INC.**

Katlani Ave., P.O. Box 830, Sitka, AK 99835

Telex: 090-45-391

Personnel: T.E. Thompson, Pres.; John Swanson, Sales Mgr.**Plant Locations and Capabilities:** Sitka, AK: fresh/frozen halibut, salmon, Dungeness crab, king crab, snow crab; frozen/salted sable fish; shrimp, scallops, sea urchins, abalone, red snapper; roe, bait, food herring.**ST. ELIAS OCEAN PRODUCTS, INC.**

P.O. Box 548, Cordova, AK 99574

907-424-7171 • Telex: 090-26589

Parent Company: St. Elias Investment Co.**Personnel:** Jim Poor, Pres.; Norman E. Weitkamp, Sales Mgr.

(fresh/frozen); R.E. Silver, Sales Mgr. (canned); Mike Poor, Plant Mgr.

Plant Locations and Capabilities: Cordova, AK: fresh/frozen/canned salmon, halibut, scallops, crab, herring, fish roe, clams.**STERLING SEAFOODS, INC.**

P.O. Box 1847, Sitka, AK 99835

907-747-8411

Personnel: Bob Wymah, Pres.; Ed Wyman, Sales Mgr.**Plant Locations and Capabilities:** M/V Alaska Star: fresh/frozen salmon; frozen roe, bait, food herring.**Brand Packed Under:** Sterling**STUART SEAFOODS, INC.**

1520 Norton Ave., Everett, WA 98201

206-258-2546 • Telex: 152-055

Parent Company: Stuart Investment Company**Personnel:** Frank T. Stuart, Pres.; Maurice S. Martin, Sales Mgr.**Plant Locations and Capabilities:** Everett, WA: frozen salmon, bottomfish, Dungeness crab, clams and smoked fish.**Brand Packed Under:** Stuart Seafoods, Inc.**SWIFTSURE FISHERIES**

Queen Anne Square, Suite 502, 200 W. Mercer St., Seattle, WA 98119

206-284-9860 • Telex: 32-1013

Parent Company: Kodiak Island Seafoods, Inc.**Personnel:** Dean Kayler, Pres.; Robert Boroughs, Sales Mgr.**Plant Locations and Capabilities:** Anchorage, Cordova, Kodiak, Larsen Bay, AK.**SWINOMISH INDIAN FISH CO.**

955 Moorage Rd., P.O. Box 714, LaConner, WA 98257

206-466-3179

Personnel: D.J. Overmiller, Gen. Mgr.**Plant Locations and Capabilities:** LaConner, WA: fresh/frozen & smoked salmon; Dungeness and snow crab, clams.**TOGIAT FISHERIES, INC.**

1914 N. 34th St., Suite 401, Seattle, WA 98065

206-634-2757

Personnel: Jack E. Most, Pres.**Plant Locations and Capabilities:** Togiak, AK: salmon cannery.**TONGVIN ENTERPRISES LTD.**

2145 Commissioner St., Vancouver, B.C., V5L 1A4 Canada

604-255-3108 • Telex: 04-55610

Personnel: J.R. Barnsley, Pres.; A.M. Andrews, Sales Mgr.**Plant Locations and Capabilities:** Vancouver, B.C.: fresh/frozen & canned salmon; food and roe herring.**TRANS-PACIFIC SEAFOODS, INC.**

3419 16th Ave. W., Seattle, WA 98119

206-284-4563 • Telex: 32-8052

Parent Company: Trans-Pacific International Industries, Inc.**Personnel:** John Sjog, Pres.; Art James, Sales Mgr.**Plant Locations and Capabilities:** Arctic Trawler: frozen fillets (cod & pollock). M/V Pavlov, M/V Penguin: bulk frozen sections (king & tanner crab); frozen salmon, herring.**Brand Packed Under:** Arctic Fresh**TRIDENT SEAFOODS CORPORATION**

653 NW 41st St., Seattle, WA 98107

206-783-3818 • Telex: SEA 321266

Personnel: Charles H. Bundrant, Pres.; Roger Dahlke, Sales Mgr.**Plant Locations and Capabilities:** Akutan, AK: floating catcher/processors M/V Billikin & M/V Bountiful. Floating processors M/V Mr. J & M/V Tempest.**Brand Packed Under:** Trident**TRINITY SEAFOODS INC.**

129 Viewcrest, Port Angeles, WA 98362

Summer: P.O. Box 47, St. Mary's, AK 99658

206-452-3109. Summer: 907-438-2618/9

Personnel: Kiehl Loan, Pres.; John Bailey, Sales Mgr.**Plant Locations and Capabilities:** St. Mary's, AK: fresh king, chum, coho salmon. Kotzebue, AK: fresh chum.**UNIVERSAL SEAFOODS, LTD.**

P.O. Box 94, Redmond, WA 98052

206-881-8181

Personnel: J. Richard Pace, Pres.; B.E. Gilman, Sales Mgr.**Plant Locations and Capabilities:** Unisea, Dutch Harbor, AK: Vita, Dutch Harbor, AK: frozen king crab, snow crab, hair crab, salmon, herring, halibut. Redmond, WA: cold storage.**Brand Packed Under:** Unisea, Dutch Harbor, Intersea, Aleutian**URSIN SEAFOODS, INC.**

150 Nickerson, Suite 203, Seattle, WA 98109

206-283-2722 • Telex: 32-9500

Personnel: Norman W. Ursin, Pres.; Michael L. Samsel, Sales Mgr.**Plant Locations and Capabilities:** Kodiak, AK: frozen king, snow, and Dungeness crab; salmon, herring, halibut. P/V Great Alaskan: same.**Brand Packed Under:** Ursin Seafoods & Alaska Captain**THE VILLAGE CANNERY**

P.O. Box 202, Mountain Village, AK 99632

907-591-2027 or 206-622-0663

Parent Company: Azachorok Inc.**Personnel:** Andrew Brown, Pres. (AK); Ken Davis, Sales Mgr. (WA).**Plant Locations and Capabilities:** Mountain Village, AK: fresh/frozen/canned king & chum salmon.

WARDS COVE PACKING CO., INC.

88 E. Hamlin St. (98102), P.O. Box C-5030, University Sta. (98105),
Seattle, WA

206-323-3200 • Telex: 32-8759

Personnel: Alec W. Brindle, Pres.; Patrick J. Douglas, Sales Mgr.

Plant Locations and Capabilities: Ketchikan, AK: canned/frozen salmon, halibut; Gregory J. Brindle, Superintendent; Roxana Nelson, Accountant.

Brand Packed Under: Royal Club, Pirate, Mohawk, Deep Sea, Zest, and private label brands

WASHINGTON FISH & OYSTER CO.

1100 W. Ewing St., P.O. Box C-70739, Seattle, WA 98107

206-285-6800 • Telex: 32-1071 or 32-8721

Parent Company: Ocean Beauty Seafoods, Inc.

Personnel: Victor W. Horgan Sr., Pres.; Norman E. Weitkamp, Sales Mgr. (fresh/frozen); R.E. Silver, Sales Mgr. (canned).

Plant Locations and Capabilities: Seattle, WA: fresh/frozen/cured and canned salmon, halibut, blackcod, shrimp, scallops, crab, tuna, clams, and bottomfish.

Brand Packed Under: Kodiak, Ocean Beauty, Silver Beauty, Sea Beauty, Bay Beauty, Sound Beauty, McGovern's Best, Sea North, Dixie Belle, Golden Mist, Washington, Perfection, Columbia Crest, Pillar Rock, Icy Point, Pink Beauty, Searchlight

WEST SIDE FISH CO.

Rt. 1, P.O. Box 466, Rainier, OR 97048
503-556-4586

Personnel: Donald E. Phillips, Pres.

Plant Locations and Capabilities: Rainier, OR: canned salmon; smoked salmon, sturgeon, and smelt.

Brand Packed Under: West Side Fish

YAKUTAT SEAFOODS CO.

1100 W. Ewing St., P.O. Box C-70739, Seattle, WA 98107
206-285-6800 • Telex: 32-1071 or 32-8721

Parent Company: Sealaska Corp./Ocean Beauty Seafoods, Inc.

Personnel: Victor W. Horgan Sr., Pres.; Norman E. Weitkamp, Sales Mgr.; Dean Reeves, Plant Mgr.

Plant Locations and Capabilities: Yakutat & Dry Bay, AK: fresh/frozen salmon, crab, and halibut.

YOUNG'S FOOD PROCESSING

620 S. Gladys Ave., Los Angeles, CA 90021
213-485-1775 • Telex: 9103212475 Young's LSA

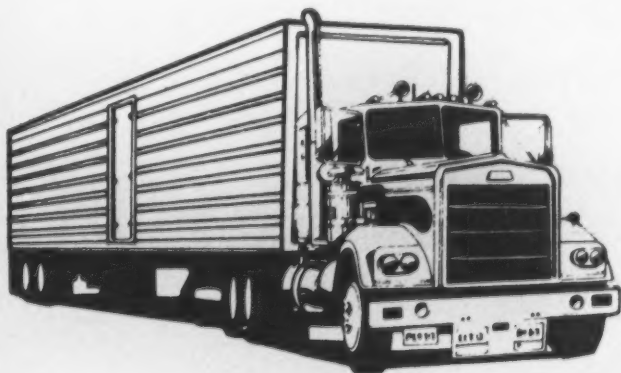
Parent Company: Young's Market Co.

Personnel: Vernon Underwood, Pres.; Roger Morehart, V. Pres., Gen. Mgr.

Plant Locations and Capabilities: Los Angeles, CA: halibut, shrimp, abalone, scallops, oysters.

Brand Packed Under: Young's, Pacific Surf

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Suite 101
Monterey Park, CA 91754
Phone 213/288-8441
Telex 67-3388

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ACHILLE PALADINI SEAFOOD CO.

500 Mendell St., San Francisco, CA 94124
415-821-1900

Species Handled: Canned: crabmeat, shrimpmeat. Frozen: all types of seafood.

ALASKA CANADA FISHERIES, INC.

3623 6th Ave. S., Seattle, WA 98134
206-624-6420 • Telex: 32-0370

Species Handled: Frozen: salmon, halibut and fletch, king crab, snow crab, Dungeness crab, herring, sable, fillets.

ALASKA COD COMPANY INC.

Fishermen's Terminal, Bldg. C-10, Seattle, WA 98119
206-282-7097 • Telex: 32-1033 Oak

Species Handled: Frozen: bottomfish, salmon, cod.

ALASKA FAR EAST CORP.

103-200 W. Thomas Bldg., Seattle, WA 98119
206-285-2153 • Telex: 32-1147

Species Handled: Frozen herring, salmon.

ALASKA FOOD COMPANY, INC.

5501 6th Ave. S., P.O. Box C-81411, Seattle, WA 98108
206-767-9544 • Telex: 329524AF

Species Handled: Frozen: Alaska pollock, Alaska cod, crab (king, tanner & Dungeness), Alaska shrimp, halibut, sablefish, scallops, salmon.

DENNIS J. ALBA & CO.

418 S. Central Ave., Suite 201, Los Angeles, CA 90013
213-680-0720

Species Handled: Frozen: shrimp, turbot, halibut steak, mahi mahi, cod, scallops.

AMENDE AND SCHULTE, INC.

1017 Fremont Ave., P.O. Box 788, S. Pasadena, CA 91030
213-682-3806 • Telex: 675-332

Species Handled: Frozen: king, Dungeness, snow crab; salmon, Australian & slipper lobster tails, mahi mahi, Japanese frog legs, IQF fillets, IQF P and D shrimp, shell-on shrimp.

AMERICAN INTERNATIONAL TRADING, INC.

15501 SE Pizza Ave., P.O. Box 97, Clackamas, OR 97015
503-657-3070 • Telex: 910-454-8409 or 910-455-8174

Species Handled: Canned: crab meat, shrimp, minced razor clams, chunk style pilchard. Frozen: scallops, shrimp, crab, lobsters, fillets, steaks, clams.

AQUAMAR BROKERAGE CO.

753 S. Atlantic Blvd., P.O. Box 2023, Monterey Park, CA 91754
213-289-6311 • Telex: 69-1688 • TWX: 910-5891604

Species Handled: Frozen: crab, lobster, mollusks, breaded/prepared items, all seafoods. Fresh seafoods.

BAKER SALES

2312 Parklands Rd., Minneapolis, MN 55416
612-926-9181 • Telex: 29-0508

Species Handled: Frozen: halibut, salmon, king crab, snow crab, Dungeness crab, bottomfish.

PAUL BARNETT SEAFOODS, INC.

P.O. Box 630446, Ojus, FL 33163
305-652-4800

Species Handled: Frozen: South African rock lobster tails.

C. BRONNER CO.

Box B, Cicero, NY 13039
315-699-5993

Species Handled: Frozen: king crab meat, legs & claws; salmon, halibut, shrimp.

BUDRUSS INC.

P.O. Box 2093, New Hyde Park, NY 11040
516-627-7228 • Telex: NY-146366 or 143190

Species Handled: Canned: shrimp, crabmeat. Frozen: shrimp, lobster tails & meat, king crab, scallops, clams & oysters, red snapper, mullet.

BUMBLE BEE SEAFOODS / CASTLE & COOKE INC.

1810 W. Emerson, P.O. Box 17705, Seattle, WA 98107
206-284-0900 • Telex: 32 8456 CASCOOKE SEA

Species Handled: Canned: salmon, tuna, oysters, clams.

CALKINS & BURKE LTD.

1477 W. Pender St., Suite 500, Vancouver, B.C., Canada V6G 2S6
604-669-3741 • Telex: 04508829 KINCAL

Species Handled: Canned: salmon, shrimp, crab, tuna, oysters, clams, lobster. Frozen: salmon, halibut, shrimp, crab, tuna, clams, oysters, lobster, herring, squid.

CASTLE & COOKE, BUMBLE BEE, PAN-ALASKA FISHERIES

Box 17705, Seattle, WA 98107
206-284-0900

Species Handled: Canned: salmon, tuna, oysters, clams. Frozen: king crab, snow crab, salmon, halibut, shrimp, groundfish, Dungeness crab.

CENTRAL LOS ANGELES TRADING, INC.

559 S. Stanford, Los Angeles, CA 90013
213-623-4810 • Telex: 67-4455

Species Handled: Frozen: salmon, king crab, snow crab, halibut, abalone, scallops, fish fillets.

CHINOOK PACKING CO.

P.O. Box 206, Chinook, WA 98614
206-777-8272

Species Handled: Frozen: OR cooked & peeled shrimpmeat, OR Dungeness crab & crabmeat, Alaskan king & snow crabmeat, IQF Pacific cod & sole fillets.

J.F. CLARKE CORPORATION

3000 Marcus Ave., Suite 1E12, Lake Success, NY 11042
516-328-8333 • 960-246

Species Handled: Canned: cooked shrimp, lobstermeat. Frozen: Alaskan king and snow crab, salmon.

CREST INTERNATIONAL CORPORATION

1400 5th Ave., P.O. Box 1671, San Diego, CA 92112
714-231-1391 • Telex: 695-469

Species Handled: Canned: blue crab. Frozen: lobster tails (cold & warm water), scallops, shrimp (green headless and P & D), squid.

DECATUR SEAFOODS, INC.

1515 Dexter Ave. N., Suite 206, Seattle, WA 98109
206-385-9110 • Telex: 32-8436

Species Handled: Canned: salmon, shrimp, oysters. Frozen: salmon, halibut, king crab, Dungeness crab, snow crab, shrimp, scallops, lobster tails, herring.

DEHN & CO., INC.

617 S. Dearborn, P.O. Box 25684, Seattle, WA 98124
206-382-4646 • Telex: 328887 DENC0

Species Handled: Canned: salmon, tuna. Frozen: salmon, halibut, crab products (all species), shrimpmeat, prawns, bottomfish (all species).

RICHARD W. DEIBERT & ASSOC. INC.

P.O. Box 507, Orinda, CA 94563
415-254-1040

Species Handled: Frozen: shrimp, king crab, snow crab, Dungeness crab, salmon, scallops, bottomfish, abalone, halibut.

MICHAEL DOYLE & ASSOCIATES LIMITED

402 W. Pender St., Vancouver, B.C., Canada V6H 1T7
604-688-7294 (Vancouver, B.C.), 206-624-9244 (Seattle, WA)

Telex: 04-507618 MIDOYLE

Species Handled: Canned: all fish species. Frozen: all fish species.

JERRY DRUM BROKERAGE CO.

3355 Barham Blvd., Los Angeles, CA 90068
213-851-4343

JACK FROST DE WITT FOOD BROKERS, INC.

8600 Main St., Williamsport, NY 14221
716-634-3413 • TWX: 710-523-1872

Species Handled: Frozen: Alaskan king crabmeat and in-shell product.

EAST COAST SEA PORT CORPORATION

338 Northern Blvd., P.O. Box 402, Great Neck, NY 11021
516-487-0353

Species Handled: Frozen: IQF pollock fillets, salmon, halibut, sole fillets, king crabmeat, king & snow crablegs, squid, cooked shrimp.

EMERALD BAY INC.

368 Hillside Ave., Needham Heights, MA 02194
617-444-9222 • 710-325-0849

Species Handled: Canned: king crab, snow crab, Dungeness crab, oysters, shrimp, salmon, tuna, herring. Frozen: king crab, snow crab, Dungeness crab, oysters, shrimp, salmon, scallops, groundfish.

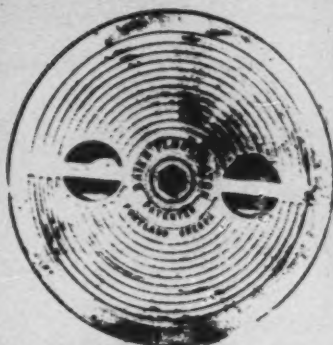
EDWARD FEIGON ENTERPRISES

P.O. Box 686, Aptos, CA 95003
408-688-1399

Species Handled: Frozen shrimp, lobster, all types of fillets, octopus, sepi, all types of seafood.

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Portland, Oregon 97211
503 287 8885

Eastern Representative: MAPECO
20 Vesey Street
New York, NY 10007

E & R INTERNATIONAL SEAFOOD, INC.

P.O. Box 41-4514, Miami Beach, FL 33141-0514
305-866-8480

Species Handled: Frozen: king crab, snow crab, frozen fish, Alaskan shrimp, squid.

GEO. ESVELDT, INC.

3203 Smith Tower, Seattle, WA 98104
206-622-3013 • Telex: 32-1077

Species Handled: Canned: salmon, crab, shrimp. Frozen: salmon.

FIN BROKERAGE COMPANY

16400 N. Park Pl., P.O. Box 5048, Southfield, MI 48037
313-559-8484 • Telex: 235655

Species Handled: Frozen: shrimp, king crab products, snow crab products, salmon, red snapper, frog legs, whiting.

L.H. FROHMAN & SONS, INC.

510 N. Dearborn St., Chicago, IL 60610
312-836-7200 • Telex: 25-4114 LOUDART

Species Handled: Canned: salmon, tuna, crab, mackerel, pet food. Frozen: salmon, halibut, bottomfish fillets, snow & king crab, shrimp, blackcod.

FROZEN OCEANIC PRODUCTS

P.O. Box 3457, San Diego, CA 92103
714-563-1396

Species Handled: Canned: abalone, sardines, squid. Frozen: shrimp, abalone, squid, lobster tails, fish fillets.

GDM INTERNATIONAL, INC.

Park 80 Plaza West - One, Saddlebrook, NJ 07662
201-845-8900 • Telex: 143-376

Species Handled: Frozen: king crab, snow crab, Dungeness crab, salmon, squid, shrimp, bottomfish.

GLOBAL SEAFOODS INC.

Central Wharf, P.O. Box 7132, DTS, Portland, ME 04112
207-773-0757 • Telex: 944327-01

Species Handled: Fresh/frozen products.

HANDY TRADING CO. OF AMERICA

4748 Burnet Ave., P.O. Box 5085, Sherman Oaks, CA 91413
213-501-6114 • Telex: 691132

Species Handled: Canned: abalone. Frozen: abalone, salmon, king & Dungeness crab, shark fins (dried).

M.K. HOROWITZ CO.

1649 Tullie Circle NE, Suite 105, Atlanta, GA 30329
404-321-0777 • 54-2695

Species Handled: Frozen: king crab, snow crab.

IMPERIAL MARKETING INC.

2390 El Camino Real, Palo Alto, CA 94306
415-857-0832 • Telex: 334451-IMI PLA

Species Handled: Frozen: Dungeness, king & snow crab & crabmeat, fillets (all species); H/G red rock, perch, pollock, whiting; halibut (dressed & steaks); salmon (all species - steaks); shrimpmeat.

INDIANA FOOD BROKERAGE CO., INC.

300 E. Fall Creek Pkwy., N. Dr., P.O. Box 1004, Indianapolis, IN 46206
317-925-2336 • TWX: 810-341-3366

Species Handled: Frozen: Alaskan king crabmeat, legs & claws; snow crabmeat, legs & claws; salmon.

INTERNATIONAL PACIFIC SEAFOODS, INC.

11264 Rush St., S. El Monte, CA 91733
213-443-1135 • Telex: 182-953

Species Handled: Frozen: finfish, shellfish. Fresh: finfish.

INTEROCEAN SEAFOODS CO.

200 SW Michigan St., Suite 129, Seattle, WA 98106
206-767-6390 • Telex: 32-8083

465 California St., San Francisco, CA 94104

415-421-5722 • Telex: 470719 ITT, 340874 WUI, INSEACO SFO

Species Handled: Canned: salmon, shrimp, tuna, mackerel, sardines, pet food. Frozen: salmon, king crab, snow crab, Dungeness crab, scallops, shrimp, halibut, bottomfish.

INTERSEA FISHERIES, LTD.

1345 Ave. of the Americas, NY 10105-0175

212-586-7676 • Telex: 12-7475

Seattle Office: 4225 23rd Ave. W., Seattle, WA 98199

206-285-5630 • Telex: 32-1256

Species Handled: Canned: salmon, herring, sturgeon. Frozen: king crab, snow crab, Dungeness crab, salmon, sablefish, sturgeon, herring, shrimp.

ISLAND SUN CO. / EMMET PURCELL & ASSOC.

100 Bush St., #510, San Francisco, CA 94104
415-781-1662

Species Handled: Canned: tuna, sardines, clams, mackerel, shrimp, crab, oysters, mussels, abalone, locos, squid, salmon. Frozen: same.

Circle number 12 on the Reader Inquiry Card

JACOBSEN - CLAHAN & CO.

260 California St., Suite 1201, San Francisco, CA 94111
415-392-3528

Species Handled: Canned: salmon, clams, chowder, shrimp, crab.

JONAH, INC.

13425 NE 20th, P.O. Box C-3225, Bellevue, WA 98009
206-643-1916 • Telex: 910-443-3024

Species Handled: Canned: shrimp, snow crab, chunk light sardines, salmon. Frozen: salmon, crab (king, snow, Dungeness), shrimp, mako shark. Fresh: salmon, bottomfish.

JUHL BROKERAGE, INC.

4200 Olson Hwy., Golden Valley, MN 55422
612-588-0841 • Telex: 29-0714

Species Handled: Canned: salmon, tuna, shrimp. Frozen: cod, haddock, perch, sole, flounder, pollock, halibut, salmon, sable, king crab, snow crab, Dungeness crab, lobster tails, scallops, shrimp, red snapper, rockfish, turbot, froglegs.

WM. KAPPLER CO., INC.

P.O. Box 351, Kenmore, WA 98028
206-486-9118 • Telex: 15-2691

Species Handled: Canned: salmon, shrimpmeal. Frozen: salmon, halibut, crab (king, snow, Dungeness), herring (food, bait), blackcod, bottomfish, dogfish, boiled octopus.

K & C FOOD SALES

656 S. Alameda St., Los Angeles, CA 90021
213-627-2781 • Telex: 67-232

Species Handled: Frozen: full lines of fresh- and salt-water foods.

R.M. KELLEY CO.

New England Seafood Center, 145 Northern Ave., Boston, MA 02210
617-542-8512

Species Handled: fresh salmon and halibut.

KELLEY-CLARKE CO.

C-34010, 2460 6th Ave. S., Seattle, WA 98124
206-622-2581 • TWX: 910-444-1330

Species Handled: Canned: red sockeye, medium red, pink & chum salmon, shrimp, Dungeness crab.

KINGCO ENTERPRISES

P.O. Box 1926, San Mateo, CA 94401
415-347-0484 • Telex: 331492

Species Handled: Frozen: fish, whiting blocks, H & G whiting & croaker, fillets, sea trout, grouper, whiting, croaker, shrimp.

KING MIDAS SEAFOOD CO.

P.O. Box 65, Evanston, IL 60204
312-866-7686

Species Handled: Frozen: crab legs, shrimp.

KING'S CHOICE FOODS CO.

656 S. Alameda St., Los Angeles, CA 90021
213-627-3781 • Telex: 67-232

Species Handled: Frozen: full lines of fresh- and salt-water foods.

BEN KOZLOFF, INC.

35 E. Wacker Dr., Chicago, IL 60601
312-263-6737 • Telex: 25-4536

Species Handled: Frozen: shrimp, whiting, all crab products (foreign & domestic), salmon, frog legs, scallops, squid, red snapper, variety of Canadian filets, lobster tails — warm water & cold (foreign and domestic).

KYOKUYO U.S.A., INC.

1070 Dexter Horton Bldg., 710 2nd Ave., Seattle, WA 98104
206-623-1343 • Telex: 32-1086

Species Handled: Canned: salmon, crab. Frozen: tanner crab, king crab, salmon, herring, shrimp, salted salmon & herring roe.

LAND & SEA, INC.

P.O. Box 383, Walpole, MA 02081
617-668-3301

Species Handled: Canned: salmon, tuna, sardines, clams. Frozen: scallops, shrimp, clams, smelt, cod, haddock, pollock, perch filets, lobstermeal, king & snow crab.

LEBOEUF & ASSOCIATES, INC.

368 Hillside Ave., Needham Heights, MA 02194
617-444-5666 • TWX: 710-325-0849

Species Handled: Canned: tuna, shrimp, salmon. Frozen: king crab, snow crab, Dungeness crab, salmon, halibut, shrimp, scallops, groundfish.

BRUCE B. LEVY COMPANY

710 Lakeside Ave. S., Rm. 518, Seattle, WA 98144
206-322-3146 • Telex: 32-9473 Burgess Sea

Species Handled: Canned: cod in tomato sauce. Frozen: salmon, crab, abalone, geoduck, squid, halibut, herring, Pacific groundfish. Live: abalone, Dungeness crab, fertilized trout eggs.

CHARLES LEWIS & SONS

P.O. Box 356, Dania, FL 33004
305-920-6911 • Telex: 51-4508

Species Handled: Frozen: king crab, snow crab, Dungeness crab, shrimp, fish filets, salmon, halibut.

LITHGOW BROS., INC.

111 SW Harrison, Suite 1B, Portland, OR 97201
503-228-1619

Species Handled: Canned: salmon, sardines, anchovies, oysters, clams. Frozen: salmon, halibut, filets (all Northwest species), shrimp and crab (shell and meat), shell-on shrimp, lobsters, oysters.

DICK LUKIN, INC.

540 Frontage Rd., Northfield, IL 60093
312-441-8885

Species Handled: Frozen: king crab products, snow crab products, salmon, halibut, sole, groundfish, shrimp, Dungeness crab. Fresh: salmon, halibut, Dungeness crab, filets.

MASSACHUSETTS COASTAL SEAFOODS, INC.

Cape Ann Industrial Pk., Magnolia, MA 01930
617-283-6060 • Telex: 94-0537

Species Handled: Frozen: portion-controlled seafoods, cod, haddock, pollock, flounder/sole, ocean catfish, ocean perch, sea scallops.

MCCULLOUGH SEAFOODS, INC.

620 E. 4th St., Los Angeles, CA 90013
213-617-8311 • Telex: 67 4558 MCCULLOUGH LSA

Species Handled: Canned: abalone (Mexican), locos (Chile & Peru), clams, shrimpmeal, sardines, tuna, salmon. Frozen: salmon, king, snow & Dungeness crab, bottomfish filets, halibut, abalone steaks, lobster, shrimp (Mexican, Ecuador & Taiwan), blocks (Korea), squid, octopus.

JACK MCLEAN ASSOC., INC.

968 Main St., P.O. Box 147, Walpole, MA 02081
617-668-1818

Species Handled: Canned: salmon, shrimp, sardines, clams. Frozen: king crab, snow crab, shrimp, scallops, conchmeal, clams, filets.

WALTER MEIER, INC.

12555 W. Wirth St., P.O. Box 776 (Milwaukee, WI), Brookfield, WI 53005
414-783-7100 • Telex: 26-9537

Species Handled: Frozen: king crab legs, king crabmeat, snow crab clusters, salmon, shrimp.

MERCO INTERTRADE INC.

4215 21st Ave. W., #100, Seattle, WA 98199
206-282-5655 • Telex: 32-84-32 MERCO INTERSEA

Species Handled: Canned: salmon, herring, sardines. Frozen: Pacific dogfish, Pacific salmon, blackcod, crab (king, snow, and Dungeness), halibut, shrimp, bottomfish. Fresh: Alaskan & Canadian salmon.

MORLEY SALES CO., INC.

809 W. Madison St., Chicago, IL 60607
312-829-1125 • Telex: 270 372

Species Handled: Frozen: halibut, salmon, blackcod, groundfish filets, crab (king, snow, and Dungeness), P & D shrimp.

NAKAMURA & ASSOCIATES, INC.

Colman Bldg., Suite 400, 811 1st Ave., Seattle, WA 98104
206-624-7653 • Telex: 152969

Species Handled: Canned: fish, crab, shrimp. Frozen: fish, king & snow crab, shrimp.

NAUTILUS TRADING CO.

624 W. 9th St., Suite 100, San Pedro, CA 90731
213-775-7171 • Telex: 68-6106

Species Handled: Frozen: king & snow crab, lobster, shrimp, bottomfish - snapper, perch, cod, swordfish, halibut, salmon, imported fillet - turbot, mahi mahi, etc.

NEEDHAM, O'MALLEY & ASSOCIATES, INC.

2000 W. 14th St., Cleveland, OH 44113
216-621-4674

Species Handled: Frozen: Alaskan king crab products, Alaskan snow crab products.

NIPPON SUISAN (U.S.A.), INC.

3718 Seattle-First National Bank Bldg., Seattle, WA 98154
206-624-7720 • Telex: 32-0036

Species Handled: Canned: salmon. Frozen: salmon, salmon roe, crab, shrimp, herring, squid.

NORTH COAST SEA FOODS INC.

12-14 Fargo St., Boston, MA 02210
617-523-0685

Species Handled: Frozen: halibut, salmon, rockcod filets, king crab sections, king crab meat.



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Squalicum Waterway
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Bellingham, WA 98227
(206) 733-1640
TELEX 15-2103

Circle number 14 on the Reader Inquiry Card

NORTHERN PRODUCTS CORPORATION

705 Terminal Sales Bldg., Seattle, WA 98101
206-622-6677 • Telex: 32-1073

Species Handled: Frozen: salmon (all species), halibut, blackcod, mildured salmon.

OCEAN HARVEST CORPORATION

186 Main St., P.O. Box 401, Gloucester, MA 01930
617-781-3131 • Telex: 94-0688

Species Handled: Frozen: ocean perch fillets, cod fillets, flounder fillets/dressed, haddock fillets, scallops IQF blocks, shrimp (pandalus borealis).

OCEANIC SALES CO.

3715 W. Bertona, Seattle, WA 98199
206-283-8836

Species Handled: Canned: salmon, shrimp, crab, tuna. Frozen: salmon, crab, shrimp, halibut.

W.A. O'NEILL & ASSOCIATES, INC.

9132 St. Helens St., P.O. Box 55, Clackamas, OR 97015
503-657-0121 • TWX: 910-454-8403

Species Handled: Canned: tuna, oysters, clams, stew & chowder, kippered snacks, sardines, crabmeat, shrimp. Frozen: fish.

OVIMPEX IMPORT & EXPORT CORP.

2 Pennsylvania Plaza, New York, NY 10121
212-868-7215 • Telex: 232380

Species Handled: Frozen: shrimp, lobster tails, flatfish.

PACIFIC PEARL SEAFOODS, INC.

1203 114th Ave. SE, P.O. Box C-10220, Bellevue, WA 98004
206-453-4600 • Telex: 32-0068

Species Handled: Canned: king & snow crab, shrimp, sardines, oysters. Frozen: king & snow crab, shrimp, salmon, halibut.

PACIFIC WESTERN SEAFOODS, INC.

444 NE Ravenna Blvd., Suite 204, Seattle, WA 98115
206-522-9411

Species Handled: Canned: salmon. Frozen: salmon, halibut, Dungeness crab.

PENNON SEAFOODS, INC.

12515 NE Bel-Red Rd., Suite 203, Bellevue, WA 98005
206-451-1978

Species Handled: Frozen: Alaska crab products, salmon (whole fish, fillets, steaks), halibut (whole & steaks), shrimp, bottomfish (cod, pollock), scallops, clams.

PETER PAN SEAFOODS, INC.

1220 Dexter Horton Bldg., Seattle, WA 98104
206-624-4344 • Telex: 328422

Species Handled: Canned: salmon. Frozen: king & tanner crab.

POLAR STAR SALES, INC.

207 Fishermen's Terminal, Seattle, WA 98119
206-283-8000 • Telex: 32-8852

Species Handled: Canned and frozen salmon.

PRELUDE FOODS INTERNATIONAL, INC.

200 SW Michigan, Suite 200, Seattle, WA 98106
206-762-0260 • Telex: 910-444-4104 PFI SEA (ITT 471117 PFI SEA)

Species Handled: Frozen: salmon, halibut, mahi mahi, Ecuador shrimp, Dungeness, snow & king crab, all PNW bottomfish, Pacific shrimpmeat.

F.P. PROTIN & CO. LTD.

4840 Miller Rd., Suite 221, Vancouver, A.M.F. B.C., V7B 1W1 Canada
604-278-6663 • Telex: 04-355573

Species Handled: Canned: salmon, tuna. Frozen: salmon, halibut, crab, herring, groundfish.

RAY SALES COMPANY

P.O. Box 5042, Walnut Creek, CA 94596
415-932-8089

Species Handled: Louisiana dried shrimp.

RENWILL SEAFOODS

P.O. Box 570326, Miami, FL 33157
305-253-0392 • Telex: 80-8992

Species Handled: Frozen: shrimp, squid, lobster tails, Florida lobsters, stone crabs, fin fish, mullet roe, crabmeat.

SCHULMAN-SHEPARD CO.

302 Magazine St., New Orleans, LA 70130
504-581-2700

Species Handled: Canned: shrimp, crabmeat. Frozen: shrimp, salmon, halibut, king crab, snow crab, Dungeness crab.

SEAEX PRODUCTS LIMITED

2115 Commissioner St., Vancouver, B.C., V5L 1A6 Canada
604-251-3531/2/3 • Telex: 453415

Species Handled: Canned: salmon. Frozen: salmon, halibut, Dungeness crab, blackcod, groundfish fillets.

THE SEAFOOD MERCHANT, INC.

4502 14th Ave. NW, Seattle, WA 98107
 206-789-4015 or 4016 or 2402 • Telex: 32-1096 SEAMERCH SEA
Species Handled: Frozen: king, snow & Dungeness crab; salmon, shrimp, bottomfish.

SEAFOOD SPECIALTIES

211 Helena St., Santa Barbara, CA 93101
 805-965-6568 • Cable: Seafood
Species Handled: Frozen: abalone, CA spot prawn, ridgeback shrimp, thresher shark, halibut, angel shark, snapper, sole, squid.

SEA GREENE COMPANY, INC.

4001 W. Devon Ave., Chicago, IL 60646
 312-283-7929
Species Handled: Frozen: headless shrimp, IQF shrimp, breaded shrimp.

SEAPORT SEAFOODS, INC.

6923 SE 35th, Mercer Island, WA 98040
 206-232-6963 • Telex: 32-9472
Species Handled: Frozen: salmon, crab (king, snow, c d Dungeness), halibut, bottomfish, shrimp.

DUDLEY SLOCUM & CO., INC.

740 S. Fulton Ave., Mt. Vernon, NY 10550
 914-699-6650 or 212-824-2200 • TWX: 710-562-0105
Species Handled: Canned: pilchard. Frozen: cod, pollock, haddock, perch, halibut, turbot, Icelandic tails, mussels, shrimp, conch, squid, trout, flounder, shark, scallops, oysters, clams, king & snow crab, salmon.

SHAFFER-HAGGART LTD.

750 W. Pender St., #600, Vancouver, B.C., V6C 2V5 Canada
 604-669-5512 • Telex: 0453299
Species Handled: Fresh, frozen, canned, smoked, and cured.
 4660 E. Marginal S., Seattle, WA 98134 (branch office)
 207-767-5331
Species Handled: Canned: salmon, shrimp, crab. Frozen: salmon, halibut, shrimp, crab, herring, squid, bottomfish, roe, clams.

SHINYEI CORP. OF AMERICA

2155 Powell St., San Francisco, CA 94133
 415-391-9144 • Telex: 340239
Species Handled: Frozen: shrimp, abalone, crabs.

ROBERT A. SMITH SEAFOODS COMPANY

520 Charles St., P.O. Box 20653, Billings, MT 59104-0653
 406-245-0922 • Telex: 313151
Species Handled: Frozen: fish, shrimp, crab, lobster, breaded/prepared items.

SPECIALTY FOOD MARKETING, INC.

9171 Wilshire Blvd., Beverly Hills, CA 90210
 213-274-8571 • Telex: 194741 SPECIALTY BVHL
Species Handled: Frozen: crab (king, snow, and Dungeness), rock-cod/snapper, petrale, dover, rex soles, halibut, salmon, turbot/arrowtooth.

THE SOUTHERN SEAFOOD CO.

416 S. Eutaw St., Baltimore, MD 21201
 301-727-4778 • Telex: 87734 SOSEACO BAL
Species Handled: Frozen: all forms of finfish and shellfish.

STATE-WIDE FOODSERVICE SALES CO.

4333 Transworld, Schiller Park, IL 60176
 312-992-0826
Species Handled: Canned: pasteurized crabmeat. Frozen: pond-raised catfish, lake perch, smelt.

SUMITOMO CORPORATION OF AMERICA

800 5th Ave., Suite 3930, Seattle, WA 98104
 206-623-5270 • Telex: 328916 or 328769 SUMITOMO SEA
Species Handled: Canned: salmon. Frozen: salmon, crab (snow & king), halibut, blackcod, herring, shrimp.

SUNBELT FOODS COMPANY

2300 Henderson Mill Rd., NE, Atlanta, GA 30345
 404-939-7567
Species Handled: Canned: sardines, tuna. Frozen: salmon, king crab.

SUNSET SEAFOOD COMPANY INC.

829½ E. Colorado Blvd., Glendale, CA 91206
 213-246-6578
Species Handled: Frozen: shrimp, crab, lobster, perch, scallops, sole, trout.

E.C. SWEENEY & COMPANY

1098 S. Milwaukee Ave., Wheeling, IL 60090
 312-541-4060
Species Handled: Frozen: salmon, halibut, crab (king, snow, Dungeness), bottomfish.

SWIFTSURE FISHERIES

Queen Anne Square, Suite 502, 200 W. Mercer St., Seattle, WA 98119
 206-284-9860 • Telex: 32-1013
Species Handled: Canned: salmon. Frozen: salmon, halibut, crab (king, snow, Dungeness), shrimp, scallops, herring.

THREE CROWN SALES, INC.

8350 N. Lincoln Ave., Skokie, IL 60077
 312-676-4777
Species Handled: Canned: lobster, crab, shrimp.

THREE MOUNTAINS FOODSERVICE INC.

11992 E. Cornell Circle, Aurora, CO 80014
 303-695-4334
Species Handled: Frozen: salmon, king crab, shrimp.

TRANS-PACIFIC FISH / TRANS-PACIFIC TRADING CO. LTD.

3600 Viking Way, Richmond, B.C., Canada V6V 1N6
 604-270-8157
Species Handled: Canned: salmon. Frozen: salmon, groundfish, blackcod, herring.

THE TUPMAN THURLOW CO. INC.

2555 Flores St., P.O. Box 6006, San Mateo, CA 94403
 415-574-8822 • TWX: 910-374-2359
Species Handled: Frozen: shrimp, lobster tails, turbot, king & snow crab, cod, sole, flounder, ocean perch, ocean catfish.

ROYCE L. UNDERWOOD INC.

2828 SW Kelley, #1, Portland, OR 97201
 503-241-0684
Species Handled: Canned: OR shrimpmeat, Dungeness crabmeat. Frozen: all fillets and Pacific seafood.

UNION FISH COMPANY

100 Bush St., San Francisco, CA 94611
 415-392-6313 • Telex: RCA 278616 • TWX: 910-372-6015
Species Handled: Canned: squid, shrimp, snow crab, mackerel, salmon. Frozen: king & snow crab, salmon, smoked salmon, shrimp, blackcod, scallops, oysters, clams, octopus, filets, squid, mullet, abalone; salted, dried & smoked fish.

VELLIS & COMPANY INC.

556 Towne Ave., Los Angeles, CA 90013
 213-623-2377 • Telex: 69-8237 VELLCO
Species Handled: Frozen: Mexican shrimp, Peruvian shrimp, fish blocks, king & snow crab, turbot, whiting filets, mahi mahi, frog legs.

VISTA PACIFIC, INC.

3030 Bridgeway, Sausalito, CA 94965
 415-332-6990 • Telex: 340 944
Species Handled: Canned: chunk-lite sardines. Frozen: salmon, king & snow crab, halibut, shrimpmeat.

JOHN J. VITALICH

522 Judah St., #, San Francisco, CA 94122
 415-587-4900
Species Handled: Frozen: swordfish, conchmeat, croakers, mackerel, mullets, pompano, octopus, squid, tuna, shrimp, blue runners, bonita, Jack Crevalle, smelts, seabass, Spanish sardines.

VWH CO., LTD.

P.O. Box 9448, Seattle, WA 98109
 206-282-4370
 230 S. Garfield Ave., Los Angeles, CA 91754
 213-288-8441 • Telex: 673388
Species Handled: Frozen: king & snow crab products, salmon (all species). Fresh & frozen: Australian lobster tails, Mexican shrimp, Dungeness crab.

WASHINGTON FISH & OYSTER CO. OF CALIF.

185 Berry St., Suite 4822, P.O. Box 3894, San Francisco, CA 94119
 415-543-7890 • WU: 34-0621 • RCA: 278763
Species Handled: Canned: cooked & peeled shrimpmeat, king crabmeat, salmon, snow crabmeat, squid. Frozen: sole (petrale, English, Dover) filets, flounder filets, rockfish filets, halibut (dressed & steaks), salmon (dressed & steaks), king crabmeat, snow crabmeat, Dungeness crab sections, snow crab sections, cooked & peeled shrimpmeat, blackcod (dressed).

WENDT INTERNATIONAL INC.

180 Nickerson St., Suite 305, Seattle, WA 98109
 206-284-9907 • Telex: 32-8892
Species Handled: Canned: salmon, crab, shrimp. Frozen: king & snow crab, salmon, shrimp, herring.

WILBUR-ELLIS COMPANY

320 California St., P.O. Box 3909, San Francisco, CA 94119
 415-772-4000 • RCA: 278781 • ITT: 470089 Domestic
 TWX: 910-372-6129 • WU: 340209 Wilburell
Species Handled: Frozen: shrimp, lobster, scallops, cod, king & Dungeness crab, squid, abalone.

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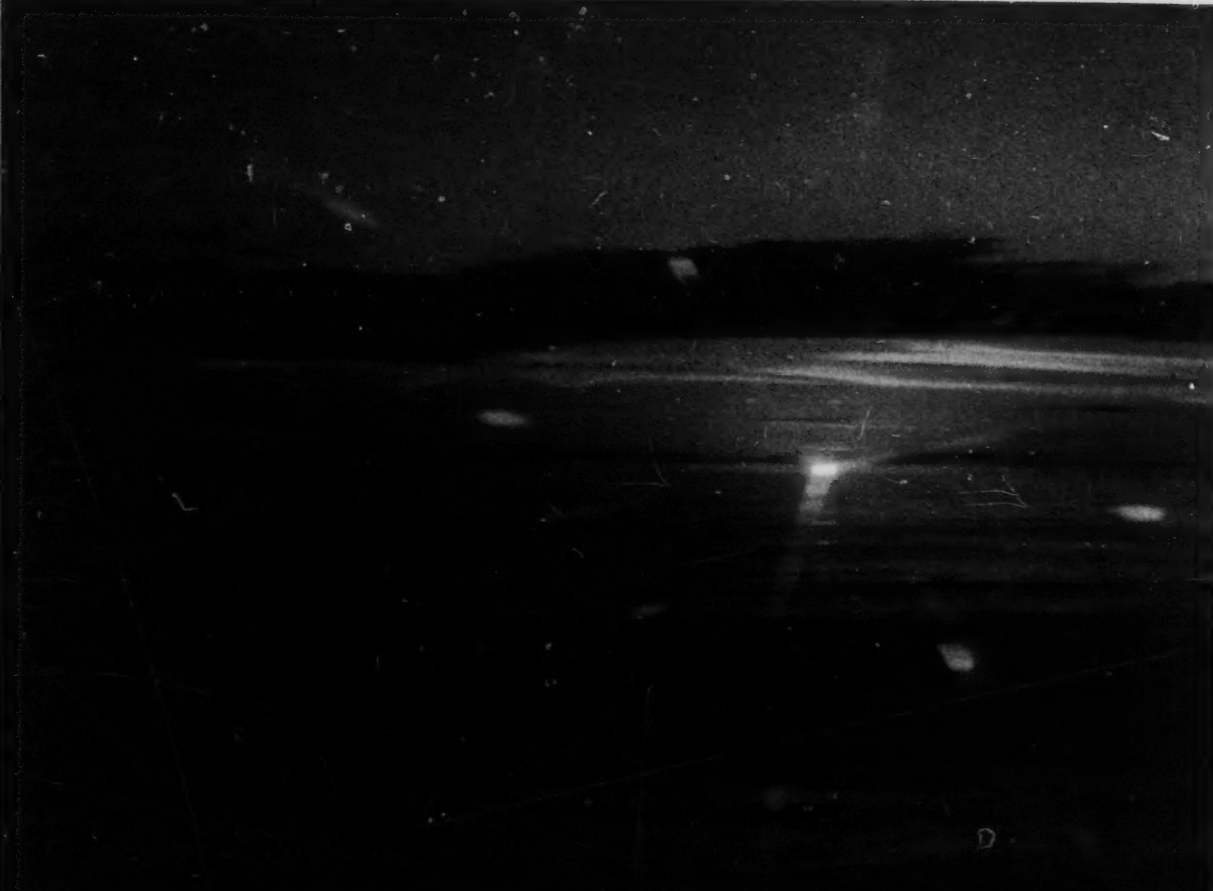
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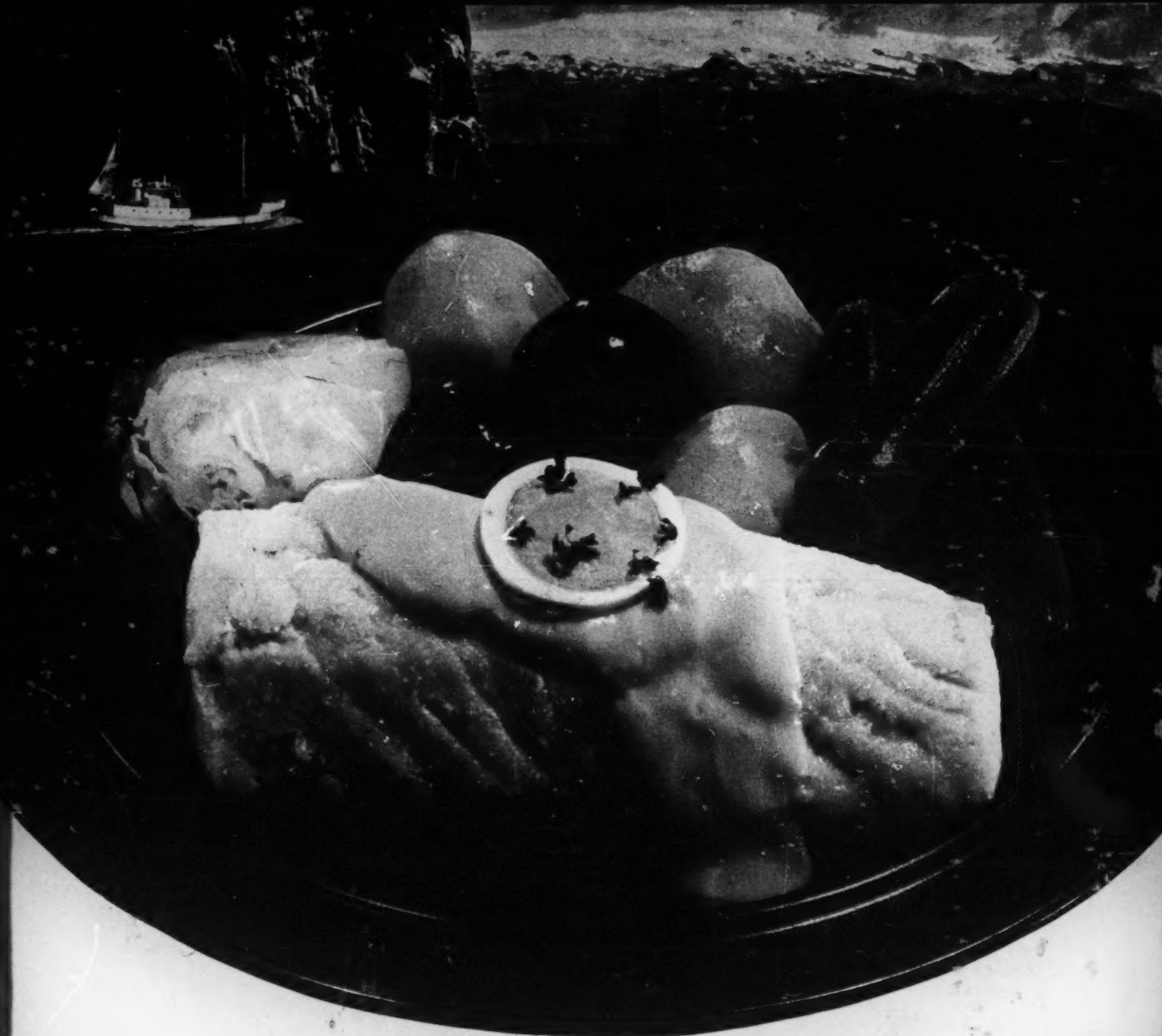
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